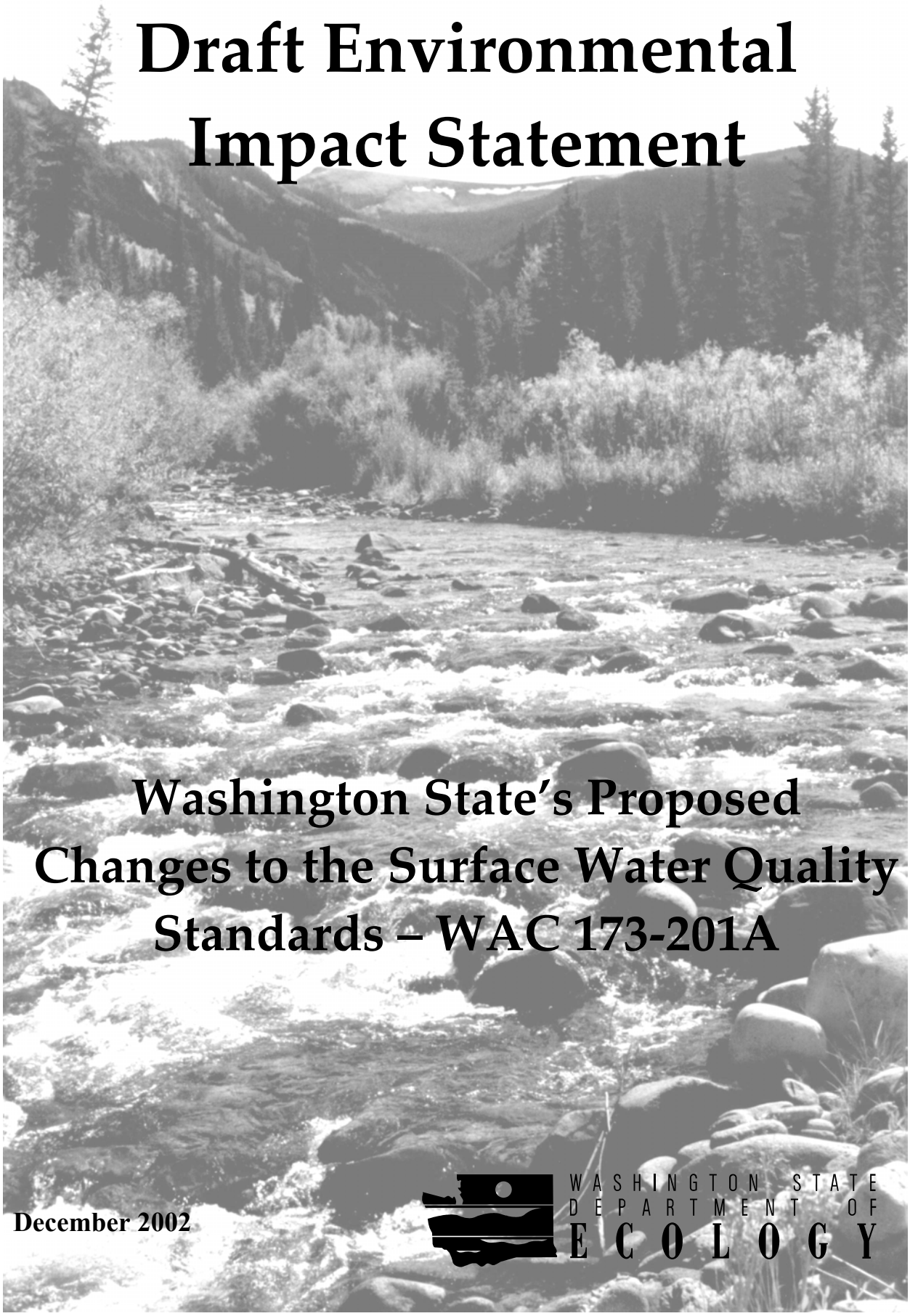
Draft Environmental Impact Statement



Washington State's Proposed Changes to the Surface Water Quality Standards – WAC 173-201A

December 2002

WASHINGTON STATE DEPARTMENT OF ECOLOGY

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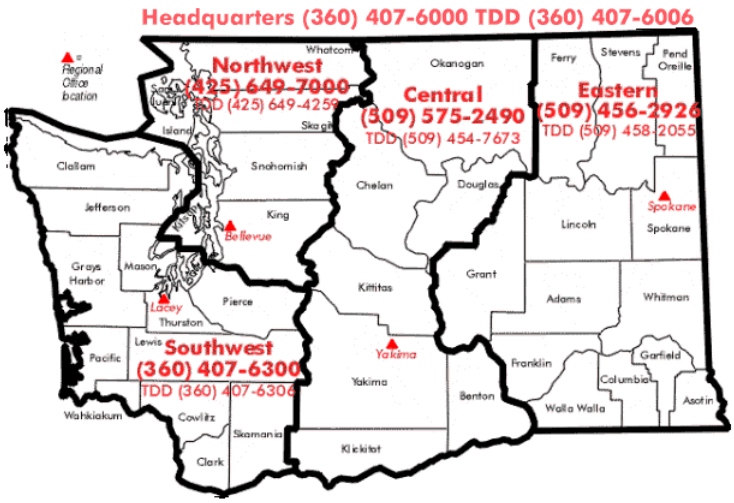

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Fact Sheet

Title:	Washington State's Proposed Changes to the Surface Water Quality Standards, WAC 173-201A
Description:	Chapter 173-201A WAC Water Quality Standards for Surface Waters of the State of Washington. These amendments would modify the existing surface water quality standards for Washington. This rule making will propose to revise the surface water quality standards by: • Moving from the current class-based system to a use-based system for designating beneficial uses of waters (for example swimming and aquatic life habitat) in Washington. • Making changes to criteria (for example temperature and bacteria) for designated uses of the waters. • Providing more clarity and detail on implementing the regulation, including the state's antidegradation policy. • Organizing the structure and sections of the regulation to make it easier to use. These changes are being undertaken to incorporate new science, provide more detail and clarity on implementing the regulations, and better tailor the criteria assigned to our waters to the characteristic uses that actually exist in those waters. This DEIS addresses only the key environmental parts of the water quality standards that Ecology is proposing to change.
Lead Agency and Responsible Official:	Megan White, P.E. Program Manager, Water Quality Program Washington State Department of Ecology
Person to contact for more information:	Susan Braley Water Quality Standards Unit Supervisor Washington Dept. of Ecology, Water Quality Program PO Box 47600 Olympia, WA 98504-7600 subr461@ecy.wa.gov (360) 407-6414 (360) 407-6426 – facsimile
DEIS Authors:	Andrew Kolosseus, Mark Hicks, Cheryl Niemi, Susan Braley, and Melissa Gildersleeve
Date DEIS Issued:	January 2, 2003
DEIS Public Comment Due Date:	Comments on this DEIS may be submitted by postal mail, facsimile, or e-mail. All comments must be postmarked or date stamped no later than March 7, 2003.

Proposed Date of Final Action:	The Final DEIS will be submitted on June 24, 2003 unless the final rule adoption date changes.
Proposed Date of Implementation:	The rule will be adopted by the Department of Ecology in June 2003. It is then sent to the Environmental Protection Agency (EPA) for approval under the Clean Water Act and the Endangered Species Act (ESA).
Subsequent Environmental Review:	Any future rule-makings (such as completion of Use Attainability Analysis) must go through separate SEPA processes.
Location of DEIS Information:	DEIS Information is available from the Department of Ecology at the address above. Additional information is also available on Ecology's website at www.ecy.wa.gov/programs/wq/swqs.
Cost of DEIS:	Free for the initial printing of the DEIS. Once the initial printing supply has been exhausted, standard reproduction costs exist.
Public Hearings:	January 27 6-9 PM Chelan Co. Auditorium, Wenatchee, WA 400 Douglas (corner of Washington & Douglas) January 28 6-9 PM Spokane Falls Community College, Spokane, WA SUB #17, Lounge AB 3410 W. Fort George Wright Dr. January 29 6-9 PM Columbia Basin College, Pasco, WA Bldg. H, Gjerde Facility 2600 N. 20th Ave. January 30 6-9 PM Department of Ecology - Central Regional Office, Yakima, WA 15 W. Yakima Ave., Suite 200 February 3 6-9 PM Whatcom County Courthouse, Bellingham, WA Council Chambers 311 Grand Ave. February 4 6-9 PM Seattle Center, Seattle, WA NW Rooms: Lopez Room 305 Harrison St.

February 5 6-9 PM
Vern Burton Memorial Community Center, Port Angeles, WA
308 E. 4th St,

February 6 6-9 PM
Water Resource Center, Vancouver, WA
4600 SE Columbia Way

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Reference Material (all materials are available on-line at www.ecy.wa.gov/programs/wq/swqs)

- Proposal to Change to Use-Based Standards Decision Process Memo by Megan White
- ***Water Quality Antidegradation Implementation Plan – Draft Discussion Paper*** **(Department of Ecology publication number 00-10-069).**
- Proposed Antidegredation Implementation Plan Decision Memo by Megan White
- ***Evaluating Standards for Protecting Aquatic Life in Washington's Surface Water Quality Standards – Temperature Criteria – Draft Discussion Paper and Literature Summary*** **(Department of Ecology publication number 00-10-070)**
- Proposed Temperature Criteria Decision Process Memo by Megan White
- ***Evaluating Standards for Protecting Aquatic Life in Washington's Surface Water Quality Standards – Dissolved Oxygen – Draft Discussion Paper and Literature Summary*** **(Department of Ecology publication number 00-10-071)**
- Proposed Dissolved Oxygen Decision Process Memo by Megan White
- ***Setting Standards for the Bacteriological Quality of Washington's Surface Water – Draft Discussion Paper and Literature Summary*** **(Department of Ecology publication number 00-10-072)**
- Proposed Bacteria Criteria Decision Process Memo by Megan White
- **Department of Ecology's draft discussion document** ***Review of USEPA's 1999 Ammonia Criteria for FreshWwaters***
- Proposed Ammonia Criteria Decision Process Memo by Megan White
- ***Establishing Surface Water Quality Criteria for the Protection of Agricultural Water Supplies – Draft Discussion Paper*** **(Department of Ecology publication number 00-10-073)**
- Proposed Agricultural Water Supply Criteria Decision Process Memo by Megan White
- Proposed Language Addressing Regulation of Dams Decision Process Memo by Megan White
- **Chapter 173-201A WAC 173-201A – Water Quality Standards for Surface Waters of the State of Washington**

Cover Letter

December 2002

To Interested Party:

The Washington Sate Department of Ecology (Ecology) has prepared this Draft Environmental Impact Statement (DEIS) on the proposed changes to the surface water quality standards (WAC 173-201A). The DEIS was prepared to satisfy the requirements of the State Environmental Policy Act (SEPA).

The state's surface water quality standards set limits on pollution in our lakes, rivers and marine waters in order to protect beneficial uses, such as swimming and fishing. After a lengthy revision process, several important changes to the state's water quality standards are being proposed. The changes are based on new science, public feedback at statewide workshops, consultation with a broad set of interested groups, and new water quality data.

A rule making effort is underway to revise the surface water quality standards by:

- Moving from the current class-based system to a use-based system for designating beneficial uses of waters (such as aquatic life habitat, recreation and water supply). This reformatting will allow the standards to be more easily tailored in the future.
- Making changes to criteria (for example temperature and bacteria) to better protect uses of waters.
- Providing more clarity and detail on implementing the regulation, including the state's antidegradation policy. This will make the standards clearer and more effective.
- Organizing the structure and sections of the regulation to make it easier to use.

This DEIS addresses only the key parts of the water quality standards that Ecology is proposing to change. The key environmental issues and options facing Ecology that are addressed in this DEIS are:

Restructuring the Standards

Antidegradation Implementation Plan:

- Analysis for degrading waters that are higher quality than water quality standards (Tier II)
- Designation of Outstanding National Resource Waters (Tier III)
- Adaptive management for general permits

Temperature Criteria:

- Char criteria – adding temperature requirements to protect spawning and rearing life-stages
- Salmon, steelhead and trout criteria – adjusting temperature requirements to protect spawning and rearing life-stages

Dissolved Oxygen Criteria for salmonids

Bacteria Criteria

Ammonia Criteria

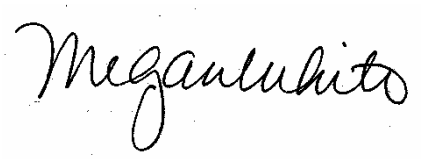
Miscellaneous:

- criteria to protect agricultural water supply
- compliance schedules for dam relicensing
- allowance for human structural changes that cannot be effectively remedied
- application of the dissolved oxygen and temperature criteria

Please visit the water quality standards Web site for a comprehensive discussion of the proposed changes. The Department of Ecology has prepared draft rule language, focus sheets, decision memos explaining our proposal, technical documents and draft Administrative Procedure Act material on the changes being proposed. These documents can be obtained by either requesting paper copies or downloading them from the Department of Ecology's Web page at: www.ecy.wa.gov/programs/wq/swqs.

For assistance or questions, please contact Susan Braley at (360) 407-6414.

Sincerely,



Megan White, P.E., Manager
Water Quality Program

Summary

The purpose of this draft Environmental Impact Statement (DEIS) is to identify the potential environmental impacts of the proposed changes to the water quality standards and to identify and analyze reasonable alternatives and mitigation measures. An Environmental Impact Statement provides an impartial discussion of significant environmental impacts. It is used to inform decision makers and the public of reasonable alternatives, including mitigation measures, which would avoid or minimize adverse impacts or enhance environmental quality.

The purpose of the DEIS is not to address every possible alternative. Although not specifically designed to meet the requirement of "least burdensome" (which is evaluated in the draft Administrative Procedures Act (APA) material), each alternative has incorporated cost considerations because of the broad, multi-year stakeholder involvement process used to develop them. Drafts of the APA materials are available on the Water Quality Standards Web site.

This DEIS is for a nonproject activity. Nonproject actions are governmental actions involving decisions on policies, plans or programs that contain standards controlling use or modification of the environment. This includes the adoption or amendment of comprehensive plans, ordinances, rules and regulations, WAC 197-11-704(20(b).

Purpose and Need of the Proposal

The state's surface water quality standards set limits on pollution in our lakes, rivers and marine waters in order to protect beneficial uses, such as swimming and aquatic life. The federal Clean Water Act requires states to review and revise as necessary their water quality standards every three years. The majority of changes in this proposal have been analyzed and discussed with stakeholders over the past ten years.

FEDERAL REQUIREMENT

> **Clean Water Act 303(c) (2)(A) states:**
> "…Such standards shall be such as to protect the public health or welfare, enhance the quality of the water and serve the purposes of this Chapter. Such standards shall be established taking into consideration their use and value for public water supplies, propagation of fish and wildlife, recreational purposes and agricultural, industrial and other purposes and also taking into consideration their use and value for navigation.

In addition to the federal requirements the Department of Ecology is required under State Statute to "retain and secure high quality waters".

WASHINGTON STATUTORY REQUIREMENTS:

WATER POLLUTION CONTROL ACT

90.48.010 Policy enunciated.
It is declared to be the public policy of the state of Washington to maintain the highest possible standards to insure the purity of all waters of the state consistent with public health and public enjoyment thereof, the propagation and protection of wild life, birds, game, fish and other aquatic life, and the industrial development of the state, and to that end require the use of all known available and reasonable methods by industries and others to prevent and control the pollution of the waters of the state of Washington. Consistent with this policy, the state of Washington will exercise its powers, as fully and as effectively as possible, to retain and secure high quality for all waters of the state. The state of Washington in recognition of the federal government's interest in the quality of the navigable waters of the United States, of which certain portions thereof are within the jurisdictional limits of this state, proclaims a public policy of working cooperatively with the federal government in a joint effort to extinguish the sources of water quality degradation, while at the same time preserving and vigorously exercising state powers to insure that present and future standards of water quality within the state shall be determined by the citizenry, through and by the efforts of state government, of the state of Washington.

90.48.035 Rule-making authority.
The department shall have the authority to, and shall promulgate, amend, or rescind such rules and regulations as it shall deem necessary to carry out the provisions of this chapter, including but not limited to rules and regulations relating to standards of quality for waters of the state and for substances discharged therein in order to maintain the highest possible standards of all waters of the state in accordance with the public policy as declared in RCW 90.48.010.

WATER RESOURCES ACT OF 1971

RCW 90.54.020 General declaration of fundamentals for utilization and management of waters of the state.
(b) Waters of the state shall be of high quality. Regardless of the quality of the waters of the state, all wastes and other materials and substances proposed for entry into said waters shall be provided with all known, available, and reasonable methods of treatment prior to entry. Notwithstanding that standards of quality established for the waters of the state would not be violated, wastes and other materials and substances shall not be allowed to enter such waters which will reduce the existing quality thereof, except in those situations where it is clear that overriding considerations of the public interest will be served.

After a lengthy public process, several important changes to the state's water quality standards are being proposed. The changes are based on new science, public feedback at statewide workshops, special work sessions, and new water quality data.

Regulatory Framework

The Department of Ecology is beginning the formal part of the process for revising state regulations. The process includes holding public hearings around the state. The hearings and the associated written comment period serve as a crucial opportunity for the public to comment on the proposal before it is adopted as the state's revised water quality standards. Once the rule is adopted, Ecology is then required to submit the rule to the United States Environmental Protection Agency (EPA) for approval. The federal fish and wildlife agencies will determine if the rule meets the Endangered Species Act (ESA). The federal approval and consultation process follows the following steps:

1. Ecology submits the adopted rule to the United States Environmental Protection Agency (EPA).
2. EPA reviews the submittal for acceptability under the Clean Water Act (CWA).
3. At the same time, EPA develops a biological assessment if there are threatened and endangered species involved and issues a draft determination of whether or not Endangered Species Act (ESA) will be satisfied.
4. If EPA believes harm to threatened and endangered species does not rise to jeopardy they would pass along the biological assessment to United States Fish and Wildlife Service (USFWS) and National Marine Fisheries Service (NMFS).
5. If USFWS and NMFS agree with the biological assessment then ESA would not be used to deny the rule, but if harm is great enough they can make conditions for approval.
6. If Ecology's draft rule rises to jeopardy then the federal fish agencies must identify alternative reasonable and prudent measures.
7. If either the Clean Water Act or the Endangered Species Act would be violated EPA would reject Ecology's rule.

Summary of the Proposal

Restructuring the Water Quality Standards
Ecology proposes to change the way it categorizes beneficial uses (aquatic life habitat, recreation and water supply). Uses are now assigned in pre-determined sets, or "classes." The proposed change is to reorganize the standards so that individual beneficial uses are assigned independently to waterbodies.

Water Quality Antidegradation Plan
The existing water quality standards contain an antidegradation policy that is required by federal regulation. The proposed revisions clarify how beneficial uses (aquatic life habitat, recreation and water supply) are to be protected and the conditions under which water quality can be degraded. Also included is a process for designating waterbodies having both exceptional water quality and public value for protection from all future sources of degradation.

Temperature Criteria
The existing temperature criteria for protecting aquatic life have been criticized as being too stringent by some and too lenient by others. These concerns led the Department of Ecology (Ecology) to conduct a detailed review of the temperature requirements for Washington's aquatic species. As a result of this review, Ecology is proposing to revise the existing temperature criteria. The new criteria are based on current scientific understanding of the effects of temperature on aquatic species. The criteria would apply to the following key species groupings: char (bull trout and Dolly Varden), salmon and coastal trout, eastern redband trout, and indigenous warm water fish.

Dissolved Oxygen Criteria
The existing state criteria were developed many years ago, and concerns have been raised that they might be out of date. As a result, Ecology has conducted a detailed review of the current technical literature and is now proposing revisions to the dissolved oxygen criteria.

Bacteria Criteria
The existing state criteria for bacteria use fecal coliform concentrations as an indicator of the safety of the water for human health protection. EPA has requested states using fecal coliform as a bacterial indicator switch to indicators that are more indicative of human pathogens, such as *E.coli* and enterococci. After a review and analysis of indicators, Ecology is proposing to use both *E. coli* and enterococci to indicate the presence of pathogens in water. *E. coli* (proposed for fresh waters) and enterococci (proposed for marine waters) have been shown to be very effective indicators of the safety of water for human contact. They are consistent with the EPA's recommendations.

Ammonia Criteria
In 1999, the EPA published updated criteria for ammonia that were less stringent than Ecology's existing criteria. Ecology is proposing to adopt EPA's 1999 updated acute (short-term effects) criteria in all fresh water and adopt EPA's 1999 updated fresh water chronic (long-term effects) criteria for waterbodies without salmonids. Ecology is proposing to continue to use its existing chronic criteria in waterbodies with salmonids.

Agricultural Water Supply Criteria
The existing water quality standards include a narrative statement that says the quality of agricultural water supplies must be protected. However, there are no numeric criteria to ensure that protection occurs. Ecology proposes adding specific numeric criteria for conductivity, total suspended solids and bicarbonate to protect the use of water for irrigated agriculture. These criteria will apply to all waterbodies in the state, since agricultural water supply is a protected beneficial use of all waters.

Dam Relicensing
New language will clarify that a compliance schedule can be used to issue water quality certifications for relicensing existing dams. In the compliance schedule, dams need to implement technical and operational changes in an effort to meet standards. If standards cannot be met through the application of such changes, dams can pursue a site-specific standard or changes to the beneficial uses designated for the waterbodies in the standards.

Other Changes
There is an analysis on language allowing for human structural changes that cannot be effectively remedied and language on how to apply dissolved oxygen and temperature criteria. There are numerous typos being fixed that are not a part of this analysis. In addition, language referencing federal requirements for existing tools such as site specific criteria, use attainability analysis and variances have been included but not analyzed in this draft EIS.

History of the Proposal

The Clean Water Act requires that states hold public hearings to review their Water Quality Standards at least once every three years and make changes as appropriate. This effort is often called the "Triennial Review."

Ecology began its Triennial Review to revise the Water Quality Standards in the early 1990s. The process started with outreach to our stakeholders to identify issues that needed to be reviewed and revised in the Water Quality Standards. Ecology held a series of public advisory panels and focused technical and policy workgroups. Over the next few years, these groups developed proposed changes to the Water Quality Standards.

In 1997, Ecology moved forward on several revisions to the Water Quality Standards. The rule-making process was completed in November 1997. These revisions included updating toxics criteria, adopting state-specific criteria for cyanide and copper in marine waters, and developing lake nutrient criteria guidelines. Work continued with stakeholders to address the more complex and controversial issues.

In 1998 and again in January 2001, Ecology held public workshops around the state to hear feedback and alternative ideas on major parts of this proposal. Over the past three years, the proposed revisions to the Water Quality Standards have continued to be improved through:

- public feedback at the workshops,
- a series of in-depth stakeholder meetings, and
- the collection of new water quality data.

Ecology is now in the formal rulemaking process. Formal public hearings are scheduled. The hearings will serve as the last formal opportunity for the public to comment on the proposal before final changes are adopted into the state's Water Quality Standards.

Summary of Environmental Impacts

The water quality standards contain numeric and narrative criteria that address the following uses:

- Aquatic life
- Water contact
- Water supply (domestic, agricultural, industrial, and stock watering)
- Miscellaneous (wildlife habitat, commerce and navigation, and fish harvesting)

The Water Quality Standards are used to:

- determine the health of waterbodies through an assessment and listing of impaired waterbodies - 303(d) list
- condition discharge permits
- set the level at which the water must be cleaned for impaired waterbodies

Summary of Alternatives

This DEIS addresses 14 issues in-depth. For each issue, the proposed alternative, the no-action alternative, and an alternative with lower environmental impact are analyzed. The following table outlines the alternatives considered in the DEIS and references the page in the DEIS that gives a more detailed discussion of the issue.

Restructuring the Standards (page 16)

Proposed Alternative	No-Action Alternative
Organize the fresh water standards by uses that are protected (aquatic life, recreation, water supply)	The current standards are organized by classes (AA, A, B); there are designated uses assigned to each class

Antidegradation Implementation Plan (page 20)

1. Analysis for degrading waters that are higher quality than water quality standards (Tier II)

Proposed Alternative	No-Action Alternative	Lower Environmental Impact Alternative
The proposed alternative is to limit the activities that would undergo an antidegradation alternatives analysis based on (1) the type of activity and (2) the amount of pollution produced by the activity.	The existing antidegradation policy does not contain any details regarding the antidegradation alternatives analysis. The existing language leaves open to agency judgment what types of activities would need to comply with Tier II.	The alternative with a lower environmental impact would be to require all new or expanded activities to undergo an antidegradation analysis.

2. Designation of Outstanding Resource Waters (Tier III)

Proposed Alternative	No-Action Alternative	Lower Environmental Impact Alternative
In the proposed alternative, waterbodies can be designated as Tier III waters by following a procedure that includes scientific, economic, and social factors, and level of support from citizens and governments. Waterbodies would be designated by name in a revised rule through the APA process.	The existing standards contain little information on designating Tier III waters. Waterbodies would be designated by name through the APA process.	An alternative with a lower environmental impact would be to add a category that would capture waterbodies that were between Tier II and Tier III. They would have less eligibility requirements but would still have to be designated in a revised rule through the APA process.

3 Adaptive Management for General Permits		
Proposed Alternative	No-Action Alternative	Lower Environmental Impact Alternative
In the proposed alternative, the antidegradation requirements are considered to be met for general permits and control programs if a formal process has been established to select, develop, adopt, and refine control practices for protecting water quality.	The existing water quality standards do not address adaptive management in the context of meeting antidegradation requirements.	Alternative with a lower environmental impact would be to place a ten-year cap on the length of time for coming into full compliance with the water quality standards.

Temperature Criteria for Freshwater (page 40)

note: The 7-DADMax is approximately 1ºC less than a one day maximum

1. Char Criteria - Spawning and Rearing Life-Stages		
Proposed Alternative	No-Action Alternative	Lower Environmental Impact Alternative
The proposed alternative uses a single, year-round criterion (13ºC 7-DADMax) to protect both rearing and spawning. It does not establish separate spawning criteria for char.	The existing criteria are not designed to protect char. The existing criteria (16ºC for Class AA and 18ºC for Class A, one-day maximums) also apply year-round. The existing criteria do not specifically designate char as a subcategory of aquatic life.	The alternative with a lower environmental impact is to adopt criteria to specifically protect spawning where and when it occurs: 7.5ºC 7-DADMax – Spawning of Char (when it occurs) and 13ºC 7-DADMax - Rearing of Char (rest of the year)

2. Char Criteria – Protection of Migratory Char		
Proposed Alternative	No-Action Alternative	Lower Environmental Impact Alternative
The proposed alternative is to rely on the salmon, steelhead and trout criterion of 16ºC as a 7-DADMax to protect migratory char.	The existing criteria are not designed to protect char. Most char migration waters would be Class AA (16ºC one-day maximum) or Class A (18ºC one-day maximum).	The alternative with a lower environmental impact would be to protect migratory char in waterbodies used for the entire summer. 7-DADMax of 14ºC.

3. Salmon, Steelhead and Trout Criteria – Spawning and Rearing Life-Stages		
Proposed Alternative	No-Action Alternative	Lower Environmental Impact Alternative
The proposed alternative uses a single, year-round criterion (16ºC 7-DADMax) to protect both rearing and spawning. It does not establish separate spawning criteria but relies on natural cooling to meet the spawning criteria.	The existing criteria (16ºC for Class AA and 18ºC for Class A, one-day maximums) also apply year-round.	The alternative with a lower environmental impact is to adopt criteria to specifically protect spawning where and when it occurs: 13ºC 7-DADMax for spawning (when it occurs) and 17ºC 7-DADMax for rearing (rest of the year).
Dissolved Oxygen Criteria for Fresh Water (page 55)		
Proposed Alternative	No-Action Alternative	Lower Environmental Impact Alternative
The proposed alternative uses year-round dual criteria (9.5 mg/L 90-day average of the daily minimums and 7.0 mg/L one-day minimum) to protect both rearing and spawning. It does not establish separate spawning criteria.	The existing criteria (9.5 mg/L for Class AA and 8.0 mg/L for Class A, one-day minimums) apply year-round.	The alternative with a lower environmental impact is to adopt criteria (90-day averages of the daily minimums) to specifically protect spawning where and when it occurs: 10.5 mg/L for spawning (when it occurs) and 8.5 mg/L for rearing (rest of the year).

Bacteria Criteria (page 61)		
Proposed Alternative	No-Action Alternative (more stringent than proposal)	Lower Environmental Impact Alternative
-*Fresh water* Primary Contact - *E. coli* at 100 cfu/100ml. Secondary Contact - E. coli at 200 cfu/100ml. -*Marine Water* Shellfish Harvesting and Primary Contact – fecal coliform at 14 cfu/100ml Where shellfish is not a use Enterococci at 35/100ml Secondary Contact. - enterococci at 70 cfu/100ml.	-*Fresh water* Primary Contact fecal coliform at 50 cfu/100ml (Class AA) and 100 cfu/100ml (Class A) Secondary Contact fecal coliform at 200 cfu/100ml (Class B) -*Marine Water* Shellfish Harvesting and Primary Contact fecal coliform at 14 cfu/100ml. Secondary Contact. fecal coliform at 100 cfu/100ml (Class B) and 200 cfu/100ml (Class C).	Same as proposed alternative but eliminate all secondary contact.

Ammonia Criteria (page 69)		
Proposed Alternative	No-Action Alternative	Lower Environmental Impact Alternative
Use existing chronic criteria for waters with salmonids. Use the EPA 1999 update criteria for other situations.	Use existing ammonia criteria in all situations.	The no action is the most protective.

Miscellaneous (page 72)

1. Selection of Criteria for Agricultural Water Supply

Proposed Alternative	No-Action Alternative	Lower Environmental Impact Alternative
Adopt numeric criteria for electrical conductivity, bicarbonate, total suspended solids and pH to protect agricultural water supply.	The existing criteria have narrative criteria but no numeric.	Adopt numeric criteria for electrical conductivity, bicarbonate, total suspended solids and pH that are more stringent than the criteria in the proposed alternative.

2. Compliance Schedules to Address Relicensing of Existing Hydropower Dams

Proposed Alternative	No-Action Alternative	Lower Environmental Impact Alternative
The proposed alternative allows for compliance schedules for dams to be used in 401 certifications if they endeavor to meet standards.	The language in the existing standards on compliance schedules is not explicit for dams.	Require all dams to fully comply with water quality standards before the certifications are issued.

3. Allowance for Irreversible Human Structural Changes

Proposed Alternative	No-Action Alternative	Lower Environmental Impact Alternative
If a waterbody does not meet temperature or dissolved oxygen criteria due to human structural changes that can not be effectively remedied then human actions considered cumulatively may not exceed temperature criteria by more than 0.3C	Current standards do not address irreversible human effects.	Do not give an allowance to irreversible human effects.

4. Application of the Dissolved Oxygen and Temperature Criteria		
Proposed Alternative	No-Action Alternative	Lower Environmental Impact Alternative
Temperatures are not to exceed the criteria (and dissolved oxygen is not to fall below the criteria) at a probability frequency of more than once every ten years on average.	In the existing standards, there is no language addressing probability frequencies. It simply states that waterbodies must meet the criteria.	Temperatures are not to exceed the criteria (and dissolved oxygen is not to fall below the criteria) at a probability frequency of more than once every twenty years on average.

Summary of Mitigation Measures

The five broad categories of mitigation measures in the proposal are:

- Increased monitoring
- Increased water clean-up
- Increased pollution prevention
- Systematic process for updating the Water Quality Standards
- Training on the water quality standards

Increases in any of these five categories would help mitigate any potential negative environmental impacts associated with the current proposal.

Alternatives

An EIS is a tool for identifying and analyzing probable adverse environmental impacts, reasonable alternatives and possible mitigation. Fourteen issues were identified that warranted in-depth discussion in this DEIS. These include aspects of the restructuring of the standards, antidegradation implementation plan, temperature criteria, dissolved oxygen criteria, bacteria criteria, ammonia criteria, agricultural water supply criteria, compliance schedules for dam relicensing, and allowances for human structural changes that cannot be effectively remedied. There are other changes to the rule that did not warrant discussion in the DEIS because they were not considered environmentally significant.

The DEIS analyzes the proposed alternative, the no-action alternative, and a "reasonable alternative". A reasonable alternative is a feasible alternate course of action that meets the proposal's objective at a lower environmental impact. Reasonable alternatives may be limited to those that an agency with jurisdiction has authority to control either directly or indirectly through the requirement of mitigation. When adopting final water quality standards, Ecology will consider comments received on all three of these alternatives.

The proposed alternative and the alternative with lower environmental impact were developed in a multi-year process. That process included a large amount of public comment from stakeholders, including the regulated community, environmental groups, tribes, and other interested parties. As such, these alternatives incorporated many concerns of cost, feasibility, and environmental protection. The no-action alternative is the existing rule language. Because all alternatives were developed in consideration of cost, complexity, effectiveness of implementation, and level of environmental protection, all are considered to be "reasonable."

The issues can be loosely grouped into two categories: those that contain numeric criteria levels with accompanying language on application and implementation, and those that are purely narrative, implementation language and do not include numeric values. Examples of the first type are the proposed criteria for temperature and bacteria; examples of the second include language describing antidegradation requirements. This DEIS examines the overall protectiveness of these types of criteria by looking not only at the context of the proposed value or description, but also examines how effectively each alternative can be managed in a regulatory context to provide protection. Each section within the DEIS contains a table summarizing the information used in the evaluation.

The characteristics of each rule alternative are evaluated using three characteristics: simplicity, usability, and environmental protection. These three elements are ranked independent of each other. However, the reader may want to balance the pros and cons of all three categories when determining what they believe would be the best alternative, or when determining the environmental consequences of any single alternative. Usability as a characteristic was critical

in recommending the proposed alternative. The specific characteristics evaluated for each alternative include:

- **Simplicity** (How easy is it for the reader to understand the rule and what is required by the rule?) Simplicity of the alternatives is evaluated according to the following system:
    - **High** – Easily understood by persons with no prior experience with water quality issues. Does not require supplemental data or information, and contains little or no subjective elements which could be interpreted in different ways. For example, an alternative with a single number, a single concept, or a concrete concept and only minor caveats.
    - **Moderate** – May be slightly confusing to persons with no prior experience with water quality issues. Requires a moderate understanding of water quality standards and implementation programs to understand. For example, an alternative with two numbers, a moderately complex concept, or a slightly abstract concept accompanied by caveats.
    - **Low** – The meaning of the requirements are not obvious to most persons. Contains requirements that cannot be determined based solely on what is in the rule. Relies heavily on abstract or subjective determinations, or contains complex formulas that require a good knowledge of mathematics or water chemistry. For example, an alternative with multiple numbers, a complex concept, or an abstract concept and many caveats.

- **Usability** (Can the alternative be used effectively to protect water quality?) This characteristic has an implementation focus that asks the question: is there something about this alternative that would make it unable to be implemented effectively? Would something about an alternative lead to incorrect uses, thus providing less protection? This does not address the stringency of the alternative for the regulated community – that analysis is in the draft APA documentation. Usability of the alternatives is evaluated according to the following system:
    - **High** – A very easy alternative to use. There are no expected obstacles to implementing the alternative that would diminish its effectiveness. For example, the alternative could be effectively written into permits and TMDLs.
    - **Moderate** – A moderately easy alternative to use. There are no or few expected major obstacles to implementing the alternative that would diminish its effectiveness. For example, the alternative could usually be effectively written into permits and TMDLs, though it may require additional complex modeling or analysis.
    - **Low** – A more difficult alternative to fully and effectively use. There may be obstacles to implementing the alternative that would diminish its effectiveness. For example, it might require complex modeling, multi-party negotiations, long-term data collection, or detailed analysis before the alternative could be used in permits and TMDLs. Complexity might affect the intended function.

- **Level of Environmental Protection**. This characteristic is a best assessment of what level of protection the criteria would provide, and is based on the information presented. The intent is to describe how close each alternative comes to meeting the objective of the rule. The level of environmental protection does not factor in issues of simplicity and usability. The reader

should evaluate simplicity, usability, and level of environmental protection when determining the consequences of adopting any single alternative. The level of environmental protection of the alternatives is evaluated according to the following system:

- **High** – The alternative would have a high likelihood of fully protecting the beneficial uses. The alternative addresses nearly all of the potential risks to the beneficial use for that issue. There are no or few exemptions that might reduce the level of protection. The protection the alternative provides is effective immediately.
- **Moderate** – The alternative would most likely provide full protection for the beneficial uses. The alternative addresses most of the potential risks to the beneficial use for that issue, but there are some exemptions or simplifying assumptions that might reduce the level of protection. The protection the alternative provides is effective immediately or in the near future.
- **Low** – The alternative might fully protect the beneficial uses. The alternative addresses many, but not all, of the potential risks to the beneficial use for that issue. There are many exemptions or simplifying assumptions that might reduce the level of protection. The protection the alternative provides might not be effective immediately, allowing for possible degradation in the short-term.

Issues Not Addressed in DEIS

Unchanged Parts of the Water Quality Standards

There are many parts of the water quality standards that Ecology is not proposing to change. This rule revision is just focused on:

- Moving from the current class-based system to a use-based system for designating beneficial uses of waters (for example swimming and aquatic life habitat) in Washington.
- Making changes to criteria (for example temperature and bacteria) for designated uses of the waters.
- Providing more clarity and detail on implementing the regulation, including the state's antidegradation policy.
- Organizing the structure and sections of the regulation to make it easier to use.

The vast majority of the rule language in the sections on toxic substances, mixing zones, short-term modifications, and special conditions, are not being changed so they are not addressed in this DEIS.

Corrections and other Minor Modifications

Numerous corrections and other minor modifications are being proposed for the water quality standards. For example, the acute and chronic cyanide criteria were reversed in the previous edition of the water quality standards. In this proposal, Ecology corrects this error.

Modifications were made to the rule to improve readability or to fit together with other changes to the water quality standards. Sections of the rule have moved location but the substance has not been altered.

These corrections and minor modifications are not deemed significant enough to warrant in-depth discussion in this DEIS.

Inserting federal language and implementation language

The draft rules include language on tools that are available under the Clean Water Act. The addition of these tools which are already available for use did not warrant an in-depth discussion in this DEIS.

Postponing the Implementation of the Proposal

The federal Clean Water Act requires states to review their water quality standards every three years. The last revision to Washington's water quality standards occurred in 1997. Some of the changes in this proposal have been discussed for ten years. At this time, Ecology sees no benefit to postponing the implementation of the proposal. The proposal is based on the current science and is more up-to-date than the existing water quality standards. As a whole, the proposed water quality standards will do a better job of protecting the beneficial uses of Washington's waterbodies.

Although parts of the proposal could be postponed, many parts of the proposal are intertwined and postponing only certain parts would be logistically difficult. Ecology additionally sees no benefit to postponing the implementation of only certain parts of the proposal. The agency has received significant feedback from a variety of stakeholders including business, environmental representatives and federal agencies that they want to see the rule process move forward.

In the future, if new scientific information indicates that the water quality standards are not able to sufficiently protect the beneficial uses, the water quality standards can be revised through a new rule-making.

Restructuring the Standards

Background

The surface water quality standards for Washington are organized in a "class-based" system where each waterbody is assigned to one of five classes: Class AA, A, B, C, and Lake Class. The existing standards link specific waterbodies with specific uses (e.g., aquatic life habitat, recreation and water supply), that are protected by water quality criteria. Class AA is for the highest quality waters. Ecology is proposing to restructure the way uses are assigned for fresh waters, away from the "class-based" system, to a "use-based" system. A "use-based" system assigns designated uses to waterbodies independent of each other, not as pre-defined sets as in the existing "class-based" system. The "class-based" format has a narrative description that links classes with waterbodies, while the proposed "use-based" format is a table listing uses across the top (first row of the table) and individual waterbodies down the first column (see draft rule WAC 173-201A-602).

Ecology is proposing this change for fresh waters for two main reasons: to make the standards less complicated and to increase Ecology's ability to change (add, delete, or refine) designated uses in the future as the existing and potential uses of waterbodies are evaluated. It is anticipated that the switch from a class-based to use-based format for marine waters will occur in another rule-making. This proposed rule change would result in little immediate change in the levels of protection afforded to waters in Washington (slight differences are discussed below).

This part of the proposed rule change has confused many people because of a perception that the proposed format change would be accompanied by substantial changes (i.e., use removal) in the uses designated for waterbodies. This rule does not reduce the level of use protection by removing uses from waterbodies. Use removal will be considered by Ecology after this rule-making is finalized, and can only be done through a Use Attainability Analysis (a UAA is a structured scientific process defined by the federal regulations, followed by a formal public rule-making process by Ecology). Ecology has developed draft guidance for UAAs, and plans to further develop and finalize that guidance after this rule revision is completed. The guidance will be developed with input from the public.

Another source of some confusion in the rule-making process has been the process of refining some existing fresh water uses. An example of this is the use "salmonid migration, rearing, spawning, and harvesting". In this rule-making process Ecology has worked extensively with

the public to refine this use to delineate the areas used by char (bull trout and Dolly Varden), which are salmonids that require colder water. The proposed rule also includes the use refinements of "warm water fish" (refined from the existing use of "other fish migration, rearing, spawning, and harvesting") and "red band trout" (also a refinement of the salmonid use described above).

Proposed Alternative

Ecology's proposed alternative is to change to a "use-based" format for fresh waters, represented by a table in the proposed rule. This alternative retains all existing uses for specific waterbodies that are designated in the existing standards, with some refinements to uses as discussed above. In the use-based system, uses will be assigned to waterbodies independently of each other, not in pre-defined classes. The reorganization will result in some changes in "additional" protection that are a result of the existing "class-based" format. For instance, the current Classes AA and A both contain the designated uses of "salmonid migration, rearing, spawning, and harvesting". Class AA is qualified as "extraordinary," and Class A is qualified as "excellent", and although the uses are the same for both classes, the two different qualifiers in some cases result in more stringent and protective criteria being applied to the Class AA waters than to the Class A waters. An example of this is the existing fresh water criteria for dissolved oxygen: the Class AA criterion is 9.5 mg/L, and the Class A criteria is 8.0 mg/L (one-day maximums).

The proposed change in format should increase the ease with which the standards are used. For example, in order to link waterbodies with uses in the "class-based" format, the reader must first refer to the existing rule in WAC 173-201A-120 where specific waterbodies are linked with their class. The reader must then refer to WAC 173-201A-030 to determine which uses belong to each of the different classes. The proposed "use-based" format is composed of a table linking specific waterbodies directly to specific uses, thus the two-step process described above for the "class-based" format would be changed to a direct, one-step process by the proposed alternative. In cases where the specific waterbody is not listed, default uses are specified. Both systems are relatively simple to use, but the use-based format is most direct.

The proposed change in format will make it easier to represent any future changes in uses for a waterbody because they could simply be indicated on the table described above. Under the existing system any changes in uses would need to be described for a specific waterbody in narrative terms (for instance, as a "special condition") in WAC 173-201A-120. This approach is more cumbersome than simply adding or deleting uses in a table.

For more information on the proposed alternative go to the Proposal to Change to Use-Based Standards Decision Process Memo by Megan White.

No-Action Alternative

The no-action alternative is to keep the existing "class-based" system for fresh waters. The system, although slightly more cumbersome to use, is still not overly complicated. The existing format confers slightly higher levels of protection to some waterbodies (see discussion above), and the proposed alternative would "equalize" those levels of protection. The current rule would continue to function adequately, although any future use changes would likely be accomplished by addition of lengthy narrative descriptions and probably continue to cause delays in removing uses that are not existing or attainable.

Alternative with Lower Environmental Impact

The alternative with lower environmental impact is to keep the existing "class-based" system. However, the "class-based" system confers only slightly higher levels of protection to some waterbodies (see discussion above) than the proposed alternative. A different format restructuring system that would add significantly greater protection has not been identified during the 8-10 year stakeholder involvement period that helped develop alternatives for this rule-making. Ecology considers the two alternatives discussed in this section to be the most viable alternatives available to designate uses in the water quality standards.

Comparison of Alternatives – Restructuring the Standards

	Proposed Alternative	No-Action Alternative	Alternative with Lower Environmental Impact
Summary of Alternative	Organize the fresh water standards by uses that are protected (aquatic life, recreation, water supply)	The current standards are organized by classes (AA, A, B); there are designated uses assigned to each class	Organize the standards by classes (AA, A, B); there are designated uses assigned to each class
Simplicity of Alternative (how easy is it for the reader to understand the rule?)	High • A single table for fresh waters will link waterbodies with their designated uses.	Medium • A two-step process leads the reader from a waterbody to the uses and criteria associated with that waterbody.	Medium • A two-step process leads the reader from a waterbody to the uses and criteria associated with that waterbody.
Usability (can the alternative be used effectively to protect water quality?)	High • It would more directly link fresh waters with their criteria and attainable uses. Future use changes would be easy to describe during rule-making. Would be able to assign the most appropriate uses to a waterbody independently of other uses.	Medium • It functions adequately to link uses with waterbodies, and the structure could accommodate future rule changes, although it would be more complicated and difficult to determine use changes.	Medium • It would function adequately to link uses with waterbodies, and the structure could accommodate future rule changes, although it would be more complicated and difficult to determine use changes.

	Proposed Alternative	No-Action Alternative	Alternative with Lower Environmental Impact
Level of Environmental Protection (this does not factor in issues of simplicity and usability addressed above)	High • The table format would help clearly link uses to waterbodies for fresh waters.	High • The existing format indirectly links waterbodies with uses, but also adds some additional protection for specific uses in some waterbodies	High • The existing format indirectly links waterbodies with uses, but also adds some additional protection for specific uses in some waterbodies

Antidegradation Implementation Plan

Introduction

For detailed information on the antidegradation implementation plan, please see Ecology's *Water Quality Antidegradation Implementation Plan – Draft Discussion Paper* (Department of Ecology publication number 00-10-069).

The EPA requires all states to develop rules and programs to protect waterbodies against degradation, or harm. As directed by the federal Clean Water Act, states not only are mandated to fully protect beneficial uses (e.g., aquatic life habitat, recreation and water supply), but also must "restore and maintain the chemical, physical, and biologic integrity of the nation's waters." This means where water quality is better than the assigned water quality standards, it should not be degraded without first demonstrating the degradation is necessary to avoid unreasonable economic and social impact. The antidegradation implementation plan establishes a formal process for accomplishing this important goal.

Federal regulations (40 CFR 131.12) require that states include a water quality policy for antidegradation in their Water Quality Standards and identify methods for implementing the policy. Ecology is proposing an antidegradation implementation plan because the existing antidegradation policy is unclear and is not consistently implemented. The proposed alternative is meant to satisfy the federal requirement for an implementation plan.

Washington's proposed antidegradation implementation plan follows the framework of the federal regulation on antidegradation (40 CFR 131.12), and consists of three tiers of protection:

Tier I - existing instream uses
All beneficial in-stream uses (e.g., fishing, swimming, and aquatic life) that have occurred in a specific waterway since 1975 must be fully protected.

Tier II – waters that are higher quality than water quality standards
In addition to protecting all in-stream beneficial uses, new and expanded activities that would further harm water quality can only be allowed when they are:

a) Providing social or economic benefits that are in the overriding public interest; and
b) Using all reasonable and appropriate techniques to reduce pollution.

Tier III – Outstanding Resource Waters
Waters of unique quality and character that constitute an outstanding resource must be eligible to be set aside from all future degradation.

The existing antidegradation policy is in WAC 173-201A-070 through 080. The proposed alternative antidegradation plan is proposed in WAC 173-201A-300 through 330.

Three different aspects of the proposed antidegradation implementation plan, alternatives for each of them, and the effects of each alternative are addressed in this section.

1. Analysis for degrading waters that are higher quality than water quality standards (Tier II)

Background

Tier II requires an analysis of two factors before Ecology allows new or expanded activities that would degrade or lower water quality. Tier II protection occurs on a high quality water that is better than the numeric and narrative criteria in the water quality standards and includes an evaluation of alternatives and a determination of overriding public interest.

In some cases, this "Tier II analysis" might be very simple. This would include situations where alternatives have already been evaluated. In other cases, however, this analysis might require more work and time.

Given the requirements of the Tier II analysis, Ecology has determined that it must carefully consider which activities should undergo a Tier II analysis and which activities would not go through a Tier II analysis.

Proposed Alternative

The proposed alternative is to limit the activities that would undergo a Tier II analysis based on both (1) the type of activity and (2) the amount of new pollution produced by the activity.

Type of Activities
In the proposed alternative, only certain new or expanded activities would require a Tier II analysis. The activities are:

1. National Pollutant Discharge Elimination System (NPDES) waste discharge permits;
2. State waste discharge permits to surface waters;
3. Section 401 water quality certifications for federal activities; and
4. Other water pollution control programs authorized, implemented, or administered by the department.

Any other activity, such as SEPA determinations, local permits, water rights and shoreline permits would not undergo a Tier II analysis.

Amount of New Pollution
In the proposed alternative, only new or expanded activities with a measurable effect on water quality would require a Tier II analysis. Combining this requirement with the previous requirement, the only activities that would undergo a Tier II analysis would be the four types of activities described above that also have a measurable effect on water quality.

Measurable changes would be determined based on a predicted change in water quality at a point outside the source area, at the edge of any mixing zone.[1] In the context of the proposed regulation, a measurable change would reefs to:

(i) Temperature change of 0.3°C;
(ii) Dissolved oxygen change of 0.2 mg/L,
(iii) Bacteria level change of 2 cfu/100 mL,
(iv) pH change of 0.1 units
(v) Turbidity change of 0.5 NTU, or
(vi) Any detectable change in the concentration of a toxic or radioactive substance.

For more information on the proposed alternative go to the Proposed Antidegredation Implementation Plan Decision Memo by Megan White.

No-Action Alternative

The existing antidegradation policy does not contain any details regarding the Tier II analysis. It does not spell out specific actions that must undergo a Tier II analysis but instead is written broadly in terms of the goals for the waterbody. The existing language specifies that "Whenever waters are of a higher quality than the criteria assigned for said waters, the existing quality shall be protected and pollution of said waters which will reduce the existing quality shall not be allowed…." Thus the existing regulation establishes a zero threshold for action on the part of Ecology, and leaves open to agency judgment what types of activities would need to comply. However, because it is open-ended, Ecology has difficulty interpreting and implementing Tier II.

Ecology will be required to develop guidance on how to implement this part of the antidegredation policy.

Alternative with Lower Environmental Impact

Type of Activities
An alternative with a lower environmental impact would be to require new or expanded activities of any kind that are likely to cause a lowering of water quality to undergo a Tier II analysis. This

[1] A mixing zone is the portion of a waterbody downstream of a pollution source where mixing results in the dilution of pollution in the receiving water.

would include the four activities described in the proposed alternative (NPDES, Section 404, Section 101, and other water pollution control programs authorized, implemented, or administered by Ecology) as well as other activities such as SEPA determinations, local permits, water rights and shoreline permits. In this alternative, far more activities would be required to undergo a Tier II analysis. Having additional activities undergo a Tier II analysis should result in less degradation to Tier II waters.

Amount of New Pollution
Similarly, an alternative with a lower environmental impact would require new or expanded activities to undergo a Tier II analysis regardless of the amount of pollution they produce.

Comparison of Alternatives – Analysis for degrading waters that are higher quality than water quality standards (Tier II)

	Proposed Alternative	No-Action Alternative	Alternative with Lower Environmental Impact
Summary of Alternative	The proposed alternative is to limit the activities that would undergo an antidegradation alternatives analysis based on (1) the type of activity and (2) the amount of pollution produced by the activity.	The existing antidegradation policy does not contain any details regarding the antidegradation alternatives analysis. The existing language leaves open to agency judgment what types of activities would need to comply with Tier II.	The alternative with a lower environmental impact would be to require all new or expanded activities to undergo an antidegradation analysis.
Simplicity (how easy is it for the reader to understand the rule?)	Low Requires an activity to be both measurable and be a specific Water Quality program related activity.	Moderate It is not clear what activities and how it will apply.	High Is clear that all activities that might degrade water will need to go through analysis.
Usability (can the alternative be used effectively to protect water quality?)	Moderate • In some cases, detailed modeling or analysis might be required to determine the exact effect on water quality, in order to determine if it is measurable. • In the proposed alternative, only certain activities would have to complete a Tier II analysis. Ecology would be able to focus its resources on a limited number of Tier II analyses.	Low • The lack of detail in the existing standards regarding which activities should undergo a Tier II analysis makes it difficult to implement.	Low • Requiring all activities to undergo a Tier II analysis would make it difficult to focus Ecology's resources on those activities that individually have a significant environmental effect. • Conducting a Tier II analysis on all activities would lengthen the amount of time required to complete these activities. • If other entities are evaluating

	Proposed Alternative	No-Action Alternative	Alternative with Lower Environmental Impact
			Tier II analyses, there must be training and coordination. Can not require other agencies to implement Tier II analysis.
Level of Environmental Protection (this does not factor in issues of simplicity and usability addressed above)	Moderate • By focusing its resources, Ecology believes it can make significant improvements in water quality. • Activities not required to undergo a Tier II analysis might cause degradation of water quality. • Multiple activities that have a measurable cumulative effect, but do not have a measurable effect individually, are not required to undergo a Tier II analysis.	Low • The lack of detail in the existing standards regarding which activities should undergo a Tier II analysis makes it difficult to assure environmental protection.	High • All activities would be required to undergo Tier II analysis. This would result in a lower environmental impact. • Every action would undergo a Tier II analysis, which should help prevent significant cumulative impacts from multiple sources, even if each activity's individual effects are not measurable.

2. Designation of Outstanding Resource Waters (Tier III)

Background

Tier III sets aside waters of both unique quality and character that constitute an outstanding resource from all future degradation. Activities such as temporary actions and hazard response are the only exemptions.

Tier III is the highest level of protection. It sets up a no-degradation tier that prevents any lowering of water quality. Tier III protection for a waterbody will prevent many new or expanded activities from discharging at their expected levels of pollution. Since Tier III is a stringent tier of protection, designation of waters as Tier III must be done very carefully.

Proposed Alternative

In the proposed alternative, waterbodies can be nominated for Tier III protection by the public or any entity. The nomination must include sufficient information to show how the waterbody meets the eligibility criteria.

Waterbodies are eligible for designation if they meet one of the requirements in proposed WAC 173-201A-330 (1):

(1) To be eligible for designation as an outstanding resource water in Washington, one or more of the following must apply:
    (a) Waters in a relatively pristine condition (largely absent human sources of degradation) or possessing exceptional water quality, and also occur in federal and state: parks, monuments, preserves, wildlife refuges, wilderness areas, marine sanctuaries, estuarine research reserves, or wild and scenic rivers.
    (b) The water has unique aquatic habitat types (for example, peat bogs) that by conventional water quality parameters (such as dissolved oxygen, temperature, or sediment) are not considered high quality, but which are unique and regionally rare examples of their kind;
    (c) The water has both high water quality and regionally unique recreational value.
    (d) The water has areas of thermal refuge created by cold water seeps, springs, and groundwater emergence areas that have been determined through biological and physical habitat studies to be critical to the long-term protection of aquatic species (for this type of outstanding resource water, the non-degradation protection would apply only to temperature).

The following conditions are proposed for designating Tier III waterbodies:

- In determining whether or not to designate an outstanding resource water, the department will consider factors relating to the difficulty of maintaining the current quality of the waterbody.
- Outstanding resource waters should not be designated where substantial and imminent social or economic impact to the local community will occur, unless the public support is overwhelmingly in favor of the designation.
- The department will carefully weigh the level of support from the public and affected governments in assessing whether or not to designate the water as an outstanding resource water.

For more information on the proposed alternative go to the Proposed Antidegredation Implementation Plan Decision Memo by Megan White.

No-Action Alternative

In the existing standards, a waterbody may be nominated for Tier III if it meets one the following eligibility requirements:

1) Waters in national parks, national monuments, national preserves, national wildlife refuges, national wilderness areas, federal wild and scenic rivers, national seashores, national marine sanctuaries, national recreation areas, national scenic areas, and national estuarine research reserves;
2) Waters in state parks, state natural areas, state wildlife management areas, and state scenic rivers;
3) Documented aquatic habitat of priority species as determined by the department of wildlife;
4) Documented critical habitat for populations of threatened or endangered species of native anadromous fish;
5) Waters of exceptional recreational or ecological significance.

The existing water quality standards contain little information on the designation procedures for Tier III waters. Waterbodies are designated by name in the water quality standards through a formal rule-making process as defined by the APA. There are no Tier III waterbodies in the existing water quality standards.

Ecology will be required to develop guidance on how to implement this part of the antidegredation policy.

Alternative with Lower Environmental Impact

An alternative with a lower environmental impact would be to use the proposed language on Tier III and add a "Tier II½" category. Tier II½ is an application of the antidegradation policy that has implementation requirements that are more stringent than for Tier II, but somewhat less stringent than the prohibition against any lowering of water quality in Tier III. The Tier II½ approach provides a very high level of water quality protection without precluding unforeseen future economic and social development considerations Tier II½ would be a new tier of protection that is not in the existing water quality standards or in the current proposal. Waters placed in Tier II½ would receive more protection than waters in Tier II. Since Tier II½ does not have Tier III's prohibition against any lowering water quality, it should be easier to place waterbodies in Tier II½ than in Tier III.

There are many possible ways to set up a Tier II½ category. The most effective Tier II½ would contain the following elements:

1. A waterbody would be eligible for nomination if it met any of the following characteristics:
    - It is in a federal or state park, monument, preserve, wildlife refuge, wilderness area, marine sanctuary, estuarine research reserves, or wild and scenic rivers
    - It is a unique habitat type that is exceptional and regionally rare
    - It has exceptional recreational value
    - It has high water quality and is imperative to the survival of a species of aquatic life

2. The goal for new and expanded discharges to Tier II½ waters is to have no measurable effect on the quality of the water after dilution. Discharges would have to use advanced waste treatment technologies and implement the most stringent BMPs that are economically reasonable.

3. Water quality offsets would be allowed in Tier II½ waterbodies.

4. There would be allowances for temporary activities and hazard response actions similar to the allowances in Tier III.

5. Waterbodies would be nominated for Tier II½ and designated by name in the water quality standards. This designation would require a rule-making and would include full public review.

Comparison of Alternatives – Designation of Outstanding Resource Waters (Tier III)

	Proposed Alternative	No-Action Alternative	Alternative with Lower Environmental Impact
Summary of Alternative	In the proposed alternative, waterbodies can be designated as Tier III waters by following a procedure that includes scientific, economic, and social factors, and level of support from citizens and governments. Waterbodies would be designated by name in a revised rule through the APA process.	The existing standards contain little information on designating Tier III waters. Waterbodies would be designated by name through the APA process.	An alternative with a lower environmental impact would be to add a category that would capture waterbodies that were between Tier II and Tier III. They would have less eligibility requirements but would still have to be designated in a revised rule through the APA process.
Simplicity (how easy is it for the reader to understand the rule?)	Moderate • Required to weigh economic and scientific information and show that water can be maintained in pristine condition.	Moderate • Existing language does not provide enough information to understand how to designate these waters.	Low • Adding an extra Tier of protection (Tier II½) makes the water quality standards more complicated.
Usability (can the alternative be used effectively to protect water quality?)	Low • Ecology must address the difficulty of maintaining the current quality of the waterbody and the economic impacts.	Low • The only requirement to designating a Tier III is to complete a rule-making according to APA regulations. But in order to get through the APA process will also have to address economic impacts.	Low • Implementing Tier II½ in addition to Tier III would require more resources. • Designation will have to go through rulemaking. In order to get through the APA process will also have to address economic impacts.

	Proposed Alternative	No-Action Alternative	Alternative with Lower Environmental Impact
Level of Environmental Protection (this does not factor in issues of simplicity and usability addressed above)	Moderate • Few waters are absent multiple sources of point and nonpoint source pollution, which would significantly limit the waters of the state that are eligible for designation. Even waterbodies in national parks can have multiple sources of pollution.	Moderate • There is little information to use to show how to implement Tier III.	High • Tier II½ provides for a high level of protection. A waterbody in Tier II½ would receive more protection than a waterbody in Tier II. • Conversely, placing a waterbody in Tier II½ would allow more human activity than placing it in Tier III.

3. Adaptive Management for General Permits

Background

General permits and control programs present a unique situation. Many of these programs lack necessary information regarding the exact effectiveness and costs of control practices for reducing pollution. General permits are issued on a state-wide basis for an entire sector, not to each individual activity. Designing programs state-wide that protect water quality for each individual activity is challenging.

In these situations, adaptive management is a tool to address water quality programs. Pollution control practices are implemented and their effectiveness is monitored. If the pollution controls are not working, new or different pollution controls are implemented. This adaptive management approach will eventually lead to effective and efficient controls for general permits and control programs. The obvious downside to adaptive management is that it does not guarantee immediate compliance with the water quality standards.

The proposed adaptive management allowance for general permits and control programs are proposed in WAC 173-201A-320.

Proposed Alternative

In the proposed alternative, the antidegradation requirements of this section can be considered met for general permits and programs that have a formal process to select, develop, adopt, and refine control practices for protecting water quality and meeting the intent of this section. This adaptive process must:

1. Ensure that information is developed and used expeditiously to revise permit or program requirements;
2. Review and refine management and control programs in cycles not to exceed 5 years;
3. Include a plan that describes how information will be obtained and used to ensure full compliance with this chapter. The plan must be developed and documented in advance of permit or program approval under this section.

In other words, general permits and control programs can use adaptive management to meet the requirements of antidegradation. Ultimately, all of these programs must meet the numeric and narrative criteria in the water quality standards.

The proposed alternative allows adaptive management to work effectively. The general permits and control programs will implement the pollution control practices that are the most efficient and effective.

For more information on the proposed alternative go to the Proposed Antidegredation Implementation Plan Decision Memo by Megan White.

No-Action Alternative

The existing water quality standards do not address adaptive management in the context of meeting antidegradation requirements. WAC 173-201A-160 allows for schedules of compliance for use in bringing entities in compliance with the standards, and also includes a discussion on how adaptive management is used for nonpoint sources and storm water pollution. Thus the key elements of the proposal are in the standards currently, but their application in meeting the antidegradation requirements is not addressed.

Alternative with Lower Environmental Impact

Using adaptive management means it may take time for general permits and control programs to meet the water quality standards. An alternative with a lower environmental impact would be to place a maximum ten-year cap on the length of time allowed for coming into full compliance with the water quality standards. In some situations, this alternative could speed up the amount of time it takes for general permits and control programs to meet the water quality standards.

Comparison of Alternatives – Adaptive Management for General Permits

	Proposed Alternative	No-Action Alternative	Alternative with Lower Environmental Impact
Summary of Alternative	In the proposed alternative, the antidegradation requirements are considered to be met for general permits and control programs if a formal process has been established to select, develop, adopt, and refine control practices for protecting water quality.	The existing water quality standards do not address adaptive management in the context of meeting antidegradation requirements.	Alternative with a lower environmental impact would be to place a ten-year cap on the length of time for coming into full compliance with the water quality standards.
Simplicity (how easy is it for the reader to understand the rule?)	Moderate • Adaptive management and antidegredation are complex and require additional information.	High • Current rules do not address this complex concept	Moderate • Adaptive management and antidegredation are complex and require additional information.
Usability (can the alternative be used effectively to protect water quality?)	Moderate • Determining when general permits and control programs have met the requirements of the proposed alternative may be challenging.	Low • It is unclear if and how adaptive management can be used in the context of antidegradation.	Low • There is often insufficient knowledge to identify and implement all of the necessary BMPs within ten years. Requiring this compliance would be unrealistic in many situations for which general permit programs are used.

	Proposed Alternative	No-Action Alternative	Alternative with Lower Environmental Impact
Level of Environmental Protection (this does not factor in issues of simplicity and usability addressed above)	Moderate • Adaptive management demands that general permits and control programs identify and use control practices to, over time, meet the water quality standards. • In some situations, the process of adaptive management might allow more time than necessary to meet the water quality standards and protect beneficial uses.	Low • There is no current requirement that general permits will have to do anything to meet antidegredation requirements.	Moderate • Not allowing adaptive management to evolve over a longer time-period will create more demand to place the proper mixture of BMPs on the ground immediately. This inflexible process for new programs may discourage trying new BMPs or technologies.

Temperature Criteria for Freshwater

Introduction

For detailed information on the temperature requirements of Washington's native fish, please see Ecology's *Evaluating Standards for Protecting Aquatic Life in Washington's Surface Water Quality Standards – Temperature Criteria – Draft Discussion Paper and Literature Summary* (Department of Ecology publication number 00-10-070). This document contains in-depth analyses of the technical issues associated with the alternatives discussed in this DEIS.

This proposed rule revision only addresses temperature criteria for fresh water, not marine water.

Water temperature is very important for the health and survival of native fish. Each species in the aquatic community responds differently to water temperature. Thus, temperature plays a large part in influencing the health of aquatic communities. Temperature affects embryonic development, juvenile growth, adult migration, competition with non-native species, and the relative risk and severity of disease.

As part of a public review of its water quality standards in the early 90's, Ecology convened a technical work group to evaluate the water quality criteria established to protect fresh water aquatic communities. One of the recommendations of the work group was for Ecology to re-evaluate the existing criteria for temperature. This re-examination was also necessitated by Ecology's decision to propose a change from a class-based to a use-based system for identifying uses of a waterbody. The current class-based system is based on a group of uses with accompanying criteria that are assigned as a "class" to a waterbody, while a use-based system assigns criteria to individual uses, and then each use is assigned to a waterbody.

The existing state surface water quality standards contain three separate single daily maximum temperature criteria limits that can be applied to rivers:

Class AA - 16°C
Class A - 18°C
Class B - 21°C

Class AA and Class A provide two different levels of protection for the same set of beneficial uses, and are intended to protect salmonid spawning, rearing, and migration. Class AA is predominately established within forested upland areas, but Class A waters is found broadly throughout the state. Class B, is designed only to protect salmonid rearing and migration, and was not intended to fully protect spawning. There are only a small number waterbodies in the state that have been assigned the Class B designation. With each class, the criteria are applied as the highest single daily maximum measurement of temperature occurring in the waterbody. The

current rule also has a lake class, which does not apply temperature criteria limits, but requires that lakes are maintained at natural levels.

The following two tables provide a summary of the existing and proposed temperature criteria:

Existing Water Quality Criteria for Temperature	
Class and Key Species or Life-Stage Protected	One-Day Maximum Temperature
Class AA (Extraordinary Salmon Spawning and Rearing)	16ºC (60.8ºF)
Class A (Excellent Salmon Spawning and Rearing)	18ºC (64.4ºF)
Class B (Salmon Rearing)	21ºC (68ºF)
Lakes and Reservoirs	No change from natural levels

Proposed Alternative Water Quality Criteria for Temperature	
Key Species or Life-Stage Protected	7-Day Average of Daily Maximum Temperatures
Char (bull trout and Dolly Varden) Spawning and Early Tributary Rearing	13ºC (55.4ºF)
Spawning and Rearing of Salmon, Steelhead, and Trout	16ºC (60.8ºF)
Rearing only of Salmon, Steelhead, and Trout	17.5ºC (63.5ºF)
Redband Trout	18ºC (64.4ºF)
Indigenous Warm Water Fish	20ºC (68ºF)

In addition to setting criteria to protect specific species and their life-stages, the proposal includes criteria for barriers to migration and short-term lethality.

Water temperature can be calculated in many different metrics. The rolling seven-day average of the daily maximum temperature (7-DADMax) is the metric chosen for the current proposal. This metric represents a period of time over which biological consequences in response to water temperature can be expected to occur, and by focusing on the daily maximum temperatures it can prevent unhealthy fluctuations in temperature. By averaging temperatures over a week, however, this metric is less sensitive to individual daily fluctuations in water temperature then the single daily maximum limit currently used in the state standards. This means the metric can be used to set biologically relevant criteria that, when exceeded, can be viewed with more confidence as representing a period of biological impairment. The 7-DADMax is also the metric used by Oregon and Idaho and is supported by the EPA in their current effort to develop regional temperature guidance.

Existing temperature criteria are in WAC 173-201A-030 and 130. The proposed alternative temperature criteria are in proposed WAC 173-201A-200 and 602.

Three different issues, alternatives for each of the issues, and the effects of each alternative are addressed in this section.

1. Char Criteria – Spawning and Rearing Life-Stages

Background

The temperature requirements of char vary according to life stage. Char are more tolerant of warmer temperatures while rearing than they are during spawning.

Two methods that can be use to set temperature criteria are:

1. Use a single criterion designed to protect both rearing and spawning.
2. Use one criterion to protect rearing and a different criterion to protect spawning where and when it occurs.

Spawning generally begins in early fall and continues until late spring. Char require the temperature to be below about 7.5ºC 7-DADMax at the time spawning begins. This spawning requirement is the bar that each alternative will be evaluated against.

Proposed Alternative

The proposal uses a single year-round criterion to protect both rearing and spawning. It does not establish separate spawning criteria for char. The proposed temperature criteria of 13ºC 7-DADMax for char is established to protect both rearing and spawning.[2]

The proposed criterion applies year-round. Spawning and incubation, which require water even colder than this criterion, usually occurs in the fall, winter, and spring. To meet the existing year-round criteria would generally mean that temperatures would be cooler in the fall when spawning begins due to normal seasonal weather patterns. The effectiveness of the criterion in protecting char is dependent on the ability of waterbodies that meet the 13ºC 7-DADMax criteria to cool down to 7.5ºC 7-DADMax at the start of spawning

The ability of waterbodies that meet the proposed 13ºC 7-DADMax char criterion to meet an spawning initiation temperature of 7.5ºC 7-DADMax is unknown. There is a lack of data addressing where and when spawning of char occurs. There is also a lack of continuous

[2] For information on where the proposed criteria would apply, please see Ecology's *Evaluating Standards for Protecting Aquatic Life in Washington's Surface Water Quality Standards – Temperature Criteria – Draft Discussion Paper and Literature Summary* (Department of Ecology publication number 00-10-070). This document contains two alternatives addressing where the proposal would be applied.

temperature monitoring data to evaluate how much a stream cools down if the summer maximum meets the 13ºC 7-DADMax criterion. Thus the protection afforded by this alternative cannot be quantitatively estimated. In general, however, studies have found that a waterbody that stays below 13ºC 7-DADMax year-round is healthy char habitat.

For more information on the proposed alternative go to the Proposed Temperature Criteria Decision Process Memo by Megan White.

No-Action Alternative

The existing criteria also apply year-round. Spawning, which require water even colder than these criteria, usually occur in the fall, winter, and spring. To meet the existing year-round criteria would generally mean that temperatures would be cooler in the fall when spawning begins due to normal seasonal weather patterns.

The no-action alternative is to use the existing criteria of 16ºC (one-day maximum) for Class AA streams and 18ºC (one-day maximum) for Class A streams.

Neither the Class AA nor Class A temperature criteria would be expected to adequately protect char spawning. There are not enough data to analytically determine exactly how well these criteria would protect spawning requirements of char, but the criteria are well above even the upper estimates of stream temperatures that provide for healthy char rearing habitats.

Alternative with Lower Environmental Impact

The alternative with a lower environmental impact is to adopt criteria to specifically protect spawning where and when it occurs. In this alternative, the following criteria would apply to protect the char life-stages:

7.5ºC 7-DADMax – Spawning of Char (when it occurs)
13ºC 7-DADMax – Tributary Rearing of Char (rest of the year)

These criteria will have to be applied where and when spawning occurs. This alternative assures that specific criteria are set to protect critical life stages of salmon, steelhead and trout.

Implementing this alternative would have difficulties. There is not readily available information indicating when char spawning occurs. Extensive work would have to be done before this criterion could be accurately implemented statewide.

Comparison of Alternatives – Char Criteria Spawning and Rearing Life-Stages

	Proposed Alternative	No-Action Alternative	Alternative with Lower Environmental Impact
Summary of Alternative	The proposed alternative uses a single, year-round criterion (13ºC 7-DADMax) to protect both rearing and spawning. It does not establish separate spawning criteria for char.	The existing criteria are not designed to protect char. The existing criteria (16ºC for Class AA and 18ºC for Class A, one-day maximums) also apply year-round. The existing criteria do not specifically designate char as a subcategory of aquatic life.	The alternative with a lower environmental impact is to adopt criteria to specifically protect spawning where and when it occurs: 7.5ºC 7-DADMax – Spawning of Char (when it occurs) and 13ºC 7-DADMax -Rearing of Char (rest of the year)
Simplicity (how easy is it for the reader to understand the rule?)	High • There is one criterion that applies year-round.	Moderate • There is one criterion for Class AA waterbodies a different criterion for Class A waterbodies.	Low • Each waterbody would have two criteria. Which criterion applies depends on the time of year and where spawning is identified. • The spawning time periods would be listed in the water quality standards. Spawning locations would be listed in the waterbody table of designated uses.
Usability (can the alternative be used effectively to protect water quality?)	High • There is only one criterion that needs to be used. Year-round criteria mean that there is a single critical condition – this is easier to monitor and model.	Moderate • There are two criteria that need to be used. Year-round criteria mean that there is a single critical condition – this is easier to monitor and model.	Low • The spawning criterion would apply where and when spawning occurs. This would necessitate having knowledge of spawning periods in a watershed in order to accurately apply the criteria.

	Proposed Alternative	No-Action Alternative	Alternative with Lower Environmental Impact
			While general assessments are available, precise knowledge of spawning time periods and spawning locations in individual waterbodies are not readily known and available. Extensive work will have to be done to establish accurate spawning time periods and spawning locations in some watersheds. • Two criteria make temperature modeling to determine compliance limits more difficult.
Level of Environmental Protection (this does not factor in issues of simplicity and usability addressed above)	Moderate • It does not have a numeric criterion solely for protecting spawning. • The protection afforded to char by this alternative cannot be reliably quantified.	Low • The current standards would not be expected to protect char.	High • It has a numeric criterion explicitly designed to protect spawning. It does not rely on a summer criterion and subsequent cooling to protect spawning. • Identification of spawning locations would ensure that spawning areas are protected.

2. Char Criteria – Protection of Migratory Char

Background

Some char may remain in the area of their natal stream for one to three years and then migrate significant distances to more productive waters for greater growth opportunities. The larger size of these migrants is generally believed to allow them to better compete for resources, and to make use of a larger prey base that includes the juvenile fish of other species. This may be a very important survival trait of these migratory populations, and serve to free up food resources in the tributary system for juvenile char. In Washington, char may migrate all the way from headwater streams to the Puget Sound to feed and rear. Relatively little is known about the temperature preferences and requirements of these migratory fish which makes setting temperature criteria for them problematic.

For more information on migratory char, see *Evaluating Standards for Protecting Aquatic Life in Washington's Surface Water Quality Standards – Temperature Criteria – Draft Discussion Paper and Literature Summary* (Department of Ecology publication number 00-10-070).

Proposed Alternative

The proposed alternative is to rely on the salmon, steelhead and trout criterion of 16ºC as a 7-DADMax to protect migratory char.

The migratory char are predominantly in salmon, steelhead and trout strongholds. Favorable year-round temperatures in char migration waters might not be necessary if char use the waters for only part of the year. In other words, since the criterion is 16ºC (7-DADMax), char will encounter 7-DADMax temperatures less than 16ºC as long as they avoid the waterbody during the hottest year and the hottest time of that year.

There does not seem to be sufficient foundation in the scientific literature to justify setting temperature criteria in lower main stem rivers below those appropriate for the protection of salmon, steelhead and trout.

No-Action Alternative

The existing criteria, the no-action alternative, are not designed to protect char. Most char migration waters would be Class AA (16ºC one-day maximum) or Class A (18ºC one-day

maximum). These criteria are similar to the 16ºC 7-DADMax in the proposed alternative. There is not enough research to show how well these different criteria might protect the migratory char.

Alternative with Lower Environmental Impact

The alternative with a lower environmental impact would be to protect migratory char in waterbodies used for the entire summer. Determining a numeric criterion would be difficult considering the paucity of data. A 7-DADMax of 14ºC might be appropriate as this is the uppermost estimate of the temperature regime that may be protective of juvenile rearing.

Implementing this criterion would have difficulties. The migratory char use waters that are strongholds of salmon, steelhead, and trout which have different temperature requirements. There is also little information indicating which rivers are used by migratory char during the summer. This would make assigning this criterion to rivers very problematic. Extensive work would have to be done before this criterion could be accurately implemented statewide.

Comparison of Alternatives – Char Criteria Protection of Migratory Char

	Proposed Alternative	No-Action Alternative	Alternative with Lower Environmental Impact
Summary of Alternative	The proposed alternative is to rely on the salmon, steelhead and trout criterion of 16ºC as a 7-DADMax to protect migratory char.	The existing criteria are not designed to protect char. Most char migration waters would be Class AA (16ºC one-day maximum) or Class A (18ºC one-day maximum).	The alternative with a lower environmental impact would be to protect migratory char in waterbodies used for the entire summer. 7-DADMax of 14ºC.
Simplicity (how easy is it for the reader to understand the rule?)	High • There are no new criteria for migratory char.	High • There are no new criteria for migratory char.	Medium • Having a separate criterion for migratory char makes the standards slightly more complicated, but only one new criterion is added.
Usability (can the alternative be used effectively to protect water quality?)	High • There are no new criteria for migratory char.	High • There are no new criteria for migratory char.	Low • This alternative would require the identification of waterbodies used for migratory char. • There is a paucity of data for determining a migratory char criterion. Applying a criterion without a sound scientific basis is problematic.

	Proposed Alternative	No-Action Alternative	Alternative with Lower Environmental Impact
Level of Environmental Protection (this does not factor in issues of simplicity and usability addressed above)	Moderate • The criterion for salmon, steelhead, and trout might not be sufficient to protect migratory char in all situations.	Moderate • The Class AA and Class A criteria might not be sufficient to protect migratory char in all situations.	Moderate to High • Having a numeric criterion for migratory char might help their survival. The 14ºC 7-DADMax is more protective than the proposed criterion of 16ºC 7-DADMax (for salmon, steelhead and trout).

3. Salmon, Steelhead and Trout Criteria – Spawning and Rearing Life-Stages

Background

The temperature requirements of salmonids vary according to life stage. Salmon, steelhead and trout are more tolerant of warmer temperature while rearing than they are during spawning.

Two methods that can be used to set temperature criteria are:

1. Use a single criterion designed to protect both rearing and spawning.
2. Use one criterion to protect rearing and a different criterion to protect spawning where and when it occurs.

Spawning generally begins in early fall and continues until late spring. Salmon, steelhead and trout require the temperature to be below 13ºC 7-DADMax for initiating healthy spawning. This spawning requirement is the bar that each alternative will be evaluated against.

Proposed Alternative

The proposal uses a single year-round criterion to protect both rearing and spawning. It does not establish separate spawning criteria for salmon, steelhead and trout. The proposed temperature criterion of 16ºC 7-DADMax for salmon, steelhead, and trout is designed to protect both rearing and spawning. Spawning, which requires water even colder than this criterion, usually occurs in the fall, winter, and spring. To meet the existing year-round criteria would generally mean that temperatures would be cooler in the fall when spawning begins due to normal seasonal weather patterns.

In order to determine a year-round criterion to protect both rearing and spawning on a statewide basis, a multiple lines of evidence approach which provided ranges of spawning and rearing temperatures was used as a comparison with continuous monitoring data available to Ecology.

Using the multiple lines of evidence approach (described in the discussion document) to determine criteria that will fully protect salmonids, water temperature at spawning should be in a range of 12.5-14ºC (7-DADM). During non-spawning and non-incubating times, the temperature should be less than 16-17.5ºC (7-DADM). These ranges were then compared with the available temperature data. This comparison showed that 55% of streams with a summer 7-DADMax of 15-16ºC were 12.5ºC (7-DADMax) or less by the time spawning occurred, 64% were 13ºC or less, 82% were 13.5ºC or less, and all of the streams were 14ºC or less. Based on this data assessment and comparison with the multiple lines of evidence, Ecology is proposing a

single year-round criteria of 16ºC to protect both spawning and rearing of salmonids on a statewide basis.

See *Evaluating Standards for Protecting Aquatic Life in Washington's Surface Water Quality Standards – Temperature Criteria – Draft Discussion Paper and Literature Summary* (Department of Ecology publication number 00-10-070) for a more detailed analysis of this data set.

For more information on the proposed alternative go to the Proposed Temperature Criteria Decision Process Memo by Megan White

No-Action Alternative

The existing criteria also apply year-round. Spawning, which requires water even colder than these criteria, usually occurs in the fall, winter, and spring. To meet the existing year-round criteria would generally mean that temperatures would be cooler in the fall when spawning begins due to normal seasonal weather patterns.

The no-action alternative is to use the existing criteria of 16ºC (one-day maximum) for Class AA streams and 18ºC (one-day maximum) for Class A streams.

A limited data set exists for determining if the existing criteria protect spawning of other salmonids.

- Nine of the fourteen streams (64%) with a summer maximum of 15-16ºC (one-day maximum) met the spawning requirement of 13ºC 7-DADMax by the time spawning occurred.
- Only five of the thirteen streams (38%) with a summer maximum of 17-18ºC (one-day maximum) met the spawning requirement of 13ºC 7-DADMax by the time spawning occurred. Thus the existing Class A criterion is much less able to protect spawning.

For a more detailed analysis of this data set, see *Evaluating Standards for Protecting Aquatic Life in Washington's Surface Water Quality Standards – Temperature Criteria – Draft Discussion Paper and Literature Summary* (Department of Ecology publication number 00-10-070).

Alternative with Lower Environmental Impact

The alternative with a lower environmental impact is to adopt criteria to specifically protect spawning where and when it occurs. In this alternative, the following criteria would apply to protect the salmon, steelhead and trout life-stages:

13ºC 7-DADMax – Spawning of Salmon, Steelhead, and Trout (where and when it occurs)
17ºC 7-DADMax – Rearing of Salmon, Steelhead, and Trout (rest of the year)

This alternative assures that specific criteria are set to protect the critical life stages of salmon, steelhead, and trout.

Implementing this alternative would have some difficulties, as it would require identification of where and when spawning occurs. While spawning information and data exists through the Washington Department of Fish and Wildlife, determining more precise spawning times and spawning locations will require some work to be done before this criterion could be accurately and consistently implemented statewide.

Comparison of Alternatives – Salmon, Steelhead and Trout Criteria Spawning and Rearing Life-Stages

	Proposed Alternative	No-Action Alternative	Alternative with Lower Environmental Impact
Summary of Alternative	The proposed alternative uses a single, year-round criterion (16ºC 7-DADMax) to protect both rearing and spawning. It does not establish separate spawning criteria but relies on natural cooling to meet the spawning criteria.	The existing criteria (16ºC for Class AA and 18ºC for Class A, one-day maximums) also apply year-round.	The alternative with a lower environmental impact is to adopt criteria to specifically protect spawning where and when it occurs: 13ºC 7-DADMax for spawning (when it occurs) and 17ºC 7-DADMax for rearing (rest of the year).
Simplicity (how easy is it for the reader to understand the rule?)	High • There is one criterion that applies year-round.	Moderate • There is one criterion for Class AA waterbodies a different criterion for Class A waterbodies.	Low • Each waterbody would have two criteria. Which criterion applies depends on the time of year. • The spawning time periods would be listed in the water quality standards. Spawning locations would be listed in the waterbody table of designated uses.
Usability (can the alternative be used effectively to protect water quality?)	High • There is only one criterion that needs to be used. Year-round criteria mean that there is a single critical condition – this is easier to monitor and model.	Moderate • There are two criteria that need to be used. Year-round criteria mean that there is a single critical condition – this is easier to monitor and model.	Low • The spawning criterion would apply where and when spawning occurs. This would necessitate having knowledge of spawning periods in a watershed in order to accurately apply the criteria.

	Proposed Alternative	No-Action Alternative	Alternative with Lower Environmental Impact
			While general assessments are available, precise knowledge of spawning time periods and locations in individual waterbodies are not always known. Extensive work will have to be done to establish accurate spawning time periods and spawning locations in some watersheds. • Two criteria make temperature modeling to determine compliance limits more difficult.
Level of Environmental Protection (this does not factor in issues of simplicity and usability addressed above)	Moderate • It does not have a numeric criterion solely for protecting spawning. In some waterbodies, the desired spawning temperature might not be met by relying on natural rates of cooling.[3]	Low • It does not have a numeric criterion solely for protecting spawning. In some waterbodies, the desired spawning temperature might not be met by relying on natural rates of cooling. • The Class AA criterion (16ºC one-day maximum) would more likely to protect spawning than the Class A criterion (18ºC one-day maximum).	High • It has a numeric criterion explicitly designed to protect spawning. It does not rely on a summer criterion and subsequent cooling to protect spawning. • Identification of spawning locations would ensure that spawning areas are protected.

[3] For a more detailed analysis, see *Evaluating Standards for Protecting Aquatic Life in Washington's Surface Water Quality Standards – Temperature Criteria – Draft Discussion Paper and Literature Summary* (Department of Ecology publication number 00-10-070).

Dissolved Oxygen Criteria for Fresh Water

Introduction

For detailed information on the dissolved oxygen requirements of Washington's native fish, please see Ecology's *Evaluating Standards for Protecting Aquatic Life in Washington's Surface Water Quality Standards – Dissolved Oxygen – Draft Discussion Paper and Literature Summary* (Department of Ecology publication number 00-10-071). This document contains in-depth analyses of the technical issues associated with the alternatives discussed in this DEIS.

This proposed rule revision only addresses dissolved oxygen criteria for fresh water, not marine water.

Maintaining adequate dissolved oxygen levels in water is critical to the health of our native fish and aquatic life. Fish need a certain amount of oxygen in the water in order to survive. Ecology received many comments suggesting the existing dissolved oxygen criteria are out of date and should be reviewed.

In response to this concern, Ecology conducted a detailed review of the technical literature and is now proposing changes to the state standards. Federal regulations require that states adopt criteria to fully protect beneficial uses. Washington's dissolved oxygen criteria were developed to fully protect aquatic life from inadequate levels of dissolved oxygen.

The following two tables provide a summary of the existing and proposed alternative dissolved oxygen criteria:

Existing Water Quality Criteria for Dissolved Oxygen		
Class and Key Species or Life-Stage Protected	One-Day Minimum	90-Day Average of Daily Minimum (90-DAMin)
Class AA – Extraordinary Salmonid Spawning and Rearing	9.5 mg/L	None
Class A – Excellent Salmonid Spawning and Rearing	8.0 mg/L	None
Class B – Salmonid Rearing Only	6.5 mg/L	None
Lakes and Reservoirs	No change from natural levels	None

Proposed Alternative Water Quality Criteria for Dissolved Oxygen		
Key Species or Life-Stage Protected	One-Day Minimum	90-Day Average of Daily Minimum (90-DAMin)
Salmonid Spawning and Rearing Waters	7.0 mg/L	9.5 mg/L
Salmonid Rearing Only Waters	6.0 mg/L	8.5 mg/L
Warm Water Fish Habitat	5.0 mg/L	7.0 mg/L

Like temperature, dissolved oxygen criteria can be expressed in many different metrics. On average, the one-day minimum is about 1 mg/L lower than the 90-day average of the daily minimums (90-DAMin).

Including both the long term daily minimum average and the daily minimum component was found to allow the highest rate for achieving the biological goal with a minimum increase in stringency over the current state oxygen criteria. The average daily minimum value is based on long-term laboratory and field testing, and on recognizing the biological importance of the daily minimum oxygen concentrations to long-term performance. The limit on the single daily minimum values acts in essence as an insurance policy against short-term (e.g., 30-60 days) depressions of oxygen that could otherwise negate the benefits of maintaining more favorable long-term average minimum oxygen levels. The single daily minimum values generally represent oxygen levels that have had mixed performance in long-term laboratory tests; sometimes showing strong protection for the biota but sometimes significantly reducing biological performance.

Existing dissolved oxygen criteria are in WAC 173-201A-030 and 130. The proposed alternative dissolved oxygen criteria are in proposed WAC 173-201A-200 and 602.

Dissolved Oxygen Criteria for Salmonids

Background

The dissolved oxygen requirements of salmonids vary according to life stage. In many ways, the dissolved oxygen requirements are very similar to the temperature requirements. Salmonids are more tolerant of lower dissolved oxygen while rearing than they are during spawning.

Two methods that can be used to set dissolved oxygen criteria are:

1. Use a single criterion designed to protect both rearing and spawning.

2. Use one criterion to protect rearing and a different criterion to protect spawning where and when it occurs.

Spawning generally begins in early fall and continues until late spring. Salmonids require the dissolved oxygen to be above 10-11 mg/L as a 90-DAMin during spawning. This spawning requirement is the bar that each alternative will be evaluated against.

Proposed Alternative

The proposal uses year-round criteria to protect both rearing and spawning. It does not establish separate spawning criteria. The proposed dissolved oxygen criterion (9.5 mg/L as a 90-DAMin) is intended to protect both rearing and spawning. The proposed alternative also includes a year-round one-day minimum criterion of 7.0 mg/L. This one-day minimum is designed to prevent unusual situations where very short-term, low dissolved oxygen levels would be harmful to aquatic life, but might not be reflected in the longer-term 90-DAMin. The 7.0 mg/L one-day minimum would be used in conjunction with, not instead of, the 90-DAMin.

The proposed criteria apply year-round. Spawning, which requires water with more dissolved oxygen that this criterion, usually occurs in the fall, winter, and spring. Most of the streams that meet this criterion during the summer would have enough dissolved oxygen to protect spawning when it occurs.

The ability of the proposal to protect salmonid spawning was estimated from a limited data set. About 77% of the streams that had a 90-DAMin of 9.5-10 mg/L met a spawning goal of 10.5 mg/L 90-DAMin during spawning. In other words, the majority of the streams that met the annual minimum criterion of 9.5 mg/L (90-DAMin) also provided good support for spawning. For a more detailed analysis of this data set, see *Evaluating Standards for Protecting Aquatic Life in Washington's Surface Water Quality Standards – Dissolved Oxygen – Draft Discussion Paper and Literature Summary* (Department of Ecology publication number 00-10-071).

For more information on the proposed alternative go to the Proposed Dissolved Oxygen Decision Process Memo by Megan White

No-Action Alternative

The existing criteria also apply year-round. Spawning, which require water with more dissolved oxygen than these criteria, usually occur in the fall, winter, and spring.

The no-action alternative is to use the existing criteria of 9.5 mg/L (one-day minimum) for Class AA streams and 8.0 mg/L (one-day minimum) for Class A streams.

A limited data set exists for determining if the existing criteria protect spawning of other salmonids.

- About 98% of the streams that had a minimum one-day minimum of 9.5-10 mg/L met the spawning goal of 10.5 mg/L 90-DAMin during spawning.
- About 68% of the streams that had a minimum one-day minimum of 8-8.5 mg/L met the spawning goal of 10.5 mg/L 90-DAMin during spawning.

For a more detailed analysis of this data set, see *Evaluating Standards for Protecting Aquatic Life in Washington's Surface Water Quality Standards – Dissolved Oxygen – Draft Discussion Paper and Literature Summary* (Department of Ecology publication number 00-10-071).

Alternative with Lower Environmental Impact

The alternative with a lower environmental impact is to adopt criteria to specifically protect spawning where and when it occurs. In this alternative, the following criteria would apply to protect salmonid life-stages:

10.5 mg/L 90-DAMin – Spawning of Salmonids (when it occurs)
8.5 mg/L 90-DAMin – Rearing of Salmonids (rest of the year)

This alternative would also include the one-day minimum similar to the proposed alternative to prevent unusual situations where very short-term, low dissolved oxygen levels would be harmful to aquatic life, but might not be reflected in the longer-term 90-DAMin. The 7.0 mg/L one-day minimum would be used in conjunction with, not instead of, the 90-DAmin.

This alternative assures that specific criteria are set to protect critical life stages of salmon, steelhead, and trout.

Comparison of Alternatives – Dissolved Oxygen Criteria for Fresh Water

	Proposed Alternative	No-Action Alternative	Alternative with Lower Environmental Impact
Summary of Alternative	The proposed alternative uses year-round dual criteria (9.5 mg/L 90-day average of the daily minimums and 7.0 mg/L one-day minimum) to protect both rearing and spawning. It does not establish separate spawning criteria.	The existing criteria (9.5 mg/L for Class AA and 8.0 mg/L for Class A, one-day minimums) apply year-round.	The alternative with a lower environmental impact is to adopt criteria (90-day averages of the daily minimums) to specifically protect spawning where and when it occurs: 10.5 mg/L for spawning (when it occurs) and 8.5 mg/L for rearing (rest of the year).
Simplicity (how easy is it for the reader to understand the rule?)	Moderate • There is one pair of criteria that apply year-round to all salmonid waterbodies.	Moderate • There is one criterion for Class AA waterbodies and a different criterion for Class A waterbodies.	Low • Each waterbody would have two pairs of criteria. Which pair of criteria applies depends on the time of year. • The spawning time periods and spawning locations would be listed in the water quality standards.
Usability (can the alternative be used effectively to protect water quality?)	High • Year-round criteria mean that there is a single critical condition – this is easier to monitor and model.	High • Year-round criteria mean that there is a single critical condition – this is easier to monitor and model.	Low • The spawning criterion would apply where and when spawning occurs. This would necessitate having knowledge of spawning periods in a watershed in order to accurately apply the criteria. While general assessments are

	Proposed Alternative	No-Action Alternative	Alternative with Lower Environmental Impact
			available, precise knowledge of spawning time periods and spawning locations in individual waterbodies are not always known. Extensive work would have to be done to establish accurate spawning time periods in some watersheds. • Two criteria make dissolved oxygen modeling to determine compliance limits more difficult.
Level of Environmental Protection (this does not factor in issues of simplicity and usability addressed above)	Moderate • It does not have a numeric criterion solely for protecting spawning. In some waterbodies, the desired spawning levels might not be met by relying on natural rates of cooling.[4]	Low • It does not have a numeric criterion designed to protect spawning. In some waterbodies, the desired spawning dissolved oxygen level might not be met. • The Class AA criterion (9.5 mg/L one-day minimum) would more likely protect spawning than the Class A criterion (8.0 mg/L one-day minimum).	High • It has a numeric criterion explicitly designed to protect spawning. It does not rely on a summer criterion and subsequent increasing in dissolved oxygen to protect spawning. • Identification of spawning locations would ensure that spawning areas are protected.

[4] For a more detailed analysis of this data set, see *Evaluating Standards for Protecting Aquatic Life in Washington's Surface Water Quality Standards – Dissolved Oxygen – Draft Discussion Paper and Literature Summary* (Department of Ecology publication number 00-10-071).

Bacteria Criteria

Introduction

For a detailed analysis of bacteria issues in the water quality standards, please see Ecology's *Setting Standards for the Bacteriological Quality of Washington's Surface Water – Draft Discussion Paper and Literature Summary* (Department of Ecology publication number 00-10-072). This document contains in-depth analyses of all of the issues and alternatives discussed in this DEIS.

In 1986, the United States Environmental Protection Agency (EPA) recommended to states that they should no longer use fecal coliform as an indicator of the bacterial health of water. The use of fecal coliform as an indicator has been questioned on technical grounds by EPA, as well as members of the public and the regulated community. Most of this debate surrounds the use of fecal coliform as an indicator of potential health threats to swimmers; significantly less debate exists about the use of fecal coliform as a criterion to protect consumers of shellfish. Based on studies conducted by USEPA, it was recommended that states either use *Escherichia coli* (*E. coli*) or enterococci for their bacterial indicator criteria in fresh waters, and use only enterococci in marine waters. Washington, along with many other states, did not adopt the newly recommended criteria.

Ecology conducted a technical evaluation of the current use of fecal coliform bacteria as a general indicator that pathogens might be in the water. The indicator tells us if other bacteria and pathogens might be present in a waterbody that can make people sick if they swim in the water or eat contaminated shellfish. The higher the concentration of the indicator, the more people will likely get sick.

A work group established by Ecology found little reason to conclude that any one indicator bacterium was sufficiently superior in all respects to justify their absolute support. A study done by Ecology found that a very strong correlation exists between *E.* coli and fecal coliform in Washington fresh waters. This study found that *E. coli* makes up typically between 90-99% of the measured fecal coliforms.

After evaluating a range of options, Ecology's proposed alternative is to use two new indicator bacteria to protect people who come in contact with waters contaminated with human and other animal waste. The selection of the final recommendation in the proposal was based heavily on trying to maintain the generally high quality of our state's waters and on obtaining formal approval from EPA. EPA wants the states to only use either *E. coli* or enterococci in fresh waters, and only enterococci in marine waters to protect water contact activities.

Federal regulations require that states adopt criteria to fully protect beneficial uses.

Washington's bacteria criteria were developed to fully protect people who work and play in the state's waters.

Existing Criteria for Bacteria		
Class and Use Protected	Indicator Organism	Criteria (cfu's/100 ml) (Geometric Mean)
Fresh water		
Class AA (primary contact)	Fecal coliform	50
Class A (primary contact)	Fecal coliform	100
Class B (secondary contact)	Fecal coliform	200
Marine Water		
Class AA (shellfish harvesting and primary contact)	Fecal coliform	14
Class A (shellfish harvesting and primary contact)	Fecal coliform	14
Class B (secondary contact)	Fecal coliform	100
Class C (secondary contact)	Fecal coliform	200

Proposed Alternative Criteria for Bacteria		
Use Protected	Indicator Organism	Criteria (bacterial colonies/100 ml)
Fresh water		
Primary contact	*E. coli*	100
Secondary contact	*E. coli*	200
Marine Water		
Shellfish harvesting and primary contact	Fecal Coliform	14
	Enterococci	35
Secondary contact	Fecal Coliform	14
	Enterococci	70

The vast majority of fresh waters, in the existing standards and all alternatives, are protected for primary contact recreation. The vast majority of marine waters are protected for primary contact recreation and shellfish harvesting.

Primary contact recreation means activities where a person would have direct contact with water to the point of complete submergence including, but not limited to, skin diving, swimming, and water skiing. Secondary contact recreation means activities where a person's water contact would be limited (wading or fishing) to the extent that bacterial infections of eyes, ears, respiratory or digestive systems, or urogenital areas would normally be avoided.

Ecology is not proposing to make any changes to the shellfish harvesting criteria (fecal coliform at 14 cfu/100ml). The Federal Drug Administration, which regulates bacteria criteria for

shellfish harvesting, continues to require the existing criteria for fecal coliform. Therefore, the shellfish harvesting criterion is not being discussed in this DEIS.

The risk of illness for each indicator is presented in the following table. These illness rates are used throughout this section and are based on relationships found in studies conducted by EPA.

***E. coli* in Fresh Water**		**Enterococci in Marine Water**	
Illness Rate per 1000 people	Geometric Mean	Illness Rate per 1000 people	Geometric Mean
1	22.7	1	1.2
2	29.0	2	1.4
3	37.0	4	2.1
4	**47.3**	8	4.4
5	60.4	10	6.4
6	77.1	12	9.3
7	98.5	14	13.6
7.06	**100.0**	16	19.9
8	125.9	18	29.0
9	160.8	**19**	**35.1**
10	**205.5**	20	42.4
12	335.4	**22.5**	**70**
15	699.3	24	90.3
20	2380	26	132
25	8100	28	192
30	27569	30	281

Source: *Ambient Water Quality for Bacteria - 1986*, Environmental Protection Agency.[5]

Existing bacteria criteria are in WAC 173-201A-030 and 130. The proposed alternative bacteria criteria are in proposed WAC 173-201A-200, 210, 602, and 612.

One issues, alternatives for the issue, and the effects of each alternative are addressed in this section.

[5] The EPA's illness rates only used highly credible gastroenteritis. Other illnesses were not counted. For a more detailed review of EPA's studies, including an discussion of some of its weaknesses, please see *Setting Standards for the Bacteriological Quality of Washington's Surface Water – Draft Discussion Paper and Literature Summary* (Department of Ecology publication number 00-10-072)

Bacteria Criteria

Background

Bacteria indicator criteria are based on risk levels. Any level of bacterial pollution in the water might cause illnesses; there is no "safe" level of bacteria. The assumption is that as the concentration of the bacteria indicator is lowered, fewer people will get sick.

The EPA conducted a study to determine illness rates for primary contact recreation with varying bacteria concentrations. Subjects had to have put their head under the water to be included as test subjects in the EPA analysis of illness rates. These illness rates are based on serious gastrointestinal problems and do not include infections of the skin, eyes, ears, etc. The rates for highly credible gastroenteritis are shown in the introduction.

Proposed Alternative

Fresh water

Primary Contact. The proposed alternative is to use *E. coli* at 100 cfu/100ml to protect contact recreation in fresh water. According to the EPA, this level would correspond to 7 cases of gastrointestinal illnesses per 1000 swimmers (see table in introduction). As noted previously, the risk values are provided recognizing that their accuracy is uncertain.

Secondary Contact. The proposed alternative is to use *E. coli* at 200 cfu/100ml to protect secondary contact recreation in fresh water. The secondary contact criterion was set at twice the primary contact criteria to match the relationships established in the state's existing bacterial criteria (lower than EPA guidance of five times the primary criteria). This would allow for 10 illnesses per 1,000 swimmers and 3-4 more illnesses than primary.

Ecology recognizes that reducing exposure to just wading must reduce the risk of illness compared to swimming in the water. Thus Ecology believe it is warranted to have a higher secondary contact criterion so long as that value is set cautiously. The more limited the exposure (swallowing water, time in the water, bathing with soap after contact) the lower the risk of illness.

Marine Water

Shellfish Harvesting and Primary Contact. The proposed alternative is to rely on the shellfish harvesting criteria of fecal coliform at 14 cfu/100ml to protect both shellfish harvesting and primary contact where shellfish harvesting is a designated use of the waterbody. This recognizes

that shellfish consumption is a more sensitive use that water contact. Enterococci at 35 cfu/100ml can also be used to protect primary contact recreation, and where shellfish harvesting is not a designated use, enterococci will be the indicator used to ensure that people who work and play in those waters are adequately protected. Enterococcus at 35cfu/100ml corresponded to 19 cases of gastrointestinal illnesses per 1000 swimmers (see table in introduction) in the EPA studies.

Secondary Contact. The proposed alternative is to use enterococci at 70 cfu/100ml to protect secondary contact recreation in fresh water. This approach continues the existing practice of doubling the concentration for primary contact to estimate a reasonably safe secondary contact criterion.

Enterococci at 70 cfu/100ml would correspond to about 22.5 (3-4 more than primary) cases of gastrointestinal illnesses per 1000 swimmers according to the EPA (see table in introduction).

For more information on the proposed alternative go to the Proposed Bacteria Criteria Decision Process Memo by Megan White

No-Action Alternative

The existing water quality standards use fecal coliform. In EPA's studies, they found no statistical relationship between the fecal coliform concentration in the water and illness rates of swimmers. However, fecal coliform is a more sensitive indicator than *E. coli*. Fecal coliform is a group of bacteria made up of *E. coli* and other organisms. Therefore, the concentration of fecal coliform would always be equal to or higher than the concentration of *E. coli*. As described in earlier in the section, the correlation between *E. coli* and fecal coliform in Washington is quite high. Based on an ecology study E.coli makes up typically between 90-99% of the measured fecal coliforms.

There is no statistical relationship between *E. coli* and enterococci or between fecal coliform and enterococci.

Fresh water

Primary Contact. The existing standards use fecal coliform at 50 cfu/100ml (Class AA) and 100 cfu/100ml (Class A) to protect contact recreation in fresh water. Both of these criteria are more stringent than the proposed alternative of *E. coli* at 100 cfu/100ml.

Secondary Contact. The existing standards use fecal coliform at 200 cfu/100ml (Class B) to protect secondary contact recreation. This criterion is more stringent than the proposed alternative of *E. coli* at 200 cfu/100ml.

Marine Water

Shellfish Harvesting and Primary Contact. The existing standard uses the shellfish harvesting criteria of fecal coliform at 14 cfu/100ml to protect both shellfish harvesting and primary contact. This matches the proposed alternative. There is no statistical relationship between the existing criterion and the proposed criterion of enterococci at 35 cfu/100ml, however, based on Ecology's data, waters that meet 14 cfu/100 ml fecal coliform will typically also meet the 35 cfu/100 ml enterococci criterion.[6]

Secondary Contact. The existing standards use fecal coliform at 100 cfu/100ml (Class B) and 200 cfu/100ml (Class C) to protect secondary contact recreation in marine water. There is no statistical relationship between the existing criterion and the proposed criterion of enterococci at 70 cfu/100ml.

Alternative with Lower Environmental Impact

An alternative with a lower environmental impact is to use the proposed alternative except eliminate the secondary contact use and protect all waterbodies for primary contact. Secondary contact means activities where a person's water contact would be limited (wading or fishing) to the extent that bacterial infections of eyes, ears, respiratory or digestive systems, or urogenital areas would normally be avoided. Currently, Class AA and A waters are protected for primary contact recreation. Only Class B and C waters are protected for just secondary contact recreation. These waters are listed in the existing WAC 173-201A-130 and 140.

In this alternative, all waters would have primary contact as the designated use. This would have a lower environmental impact because secondary contact waters have the potential to be used as primary contact. Since these "secondary contact" waters often flow to "primary contact" waters, this alternative will also provide a higher degree of prevention and protection for these downstream waters that are used for swimming and active water sports.

[6] From October 2000 to July 2001, Ecology conducted dual monitoring of fecal coliform and enterococci in marine waters. Of the 166 samples where fecal coliform concentrations were at or below 14 cfu/100mL, none of those samples has enterococci concentrations above 35 cfu/100mL.

Comparison of Alternatives – Bacteria Criteria

	Proposed Alternative	No-Action Alternative	Alternative with Lower Environmental Impact
Summary of Alternative	*-Fresh water* Primary Contact - *E. coli* at 100 cfu/100ml. Secondary Contact - E. coli at 200 cfu/100ml. *-Marine Water* Shellfish Harvesting and Primary Contact – fecal coliform at 14 cfu/100ml Where shellfish is not a use Enterococci at 35/100ml Secondary Contact. - enterococci at 70 cfu/100ml.	*-Fresh water* Primary Contact fecal coliform at 50 cfu/100ml (Class AA) and 100 cfu/100ml (Class A) Secondary Contact fecal coliform at 200 cfu/100ml (Class B) *-Marine Water* Shellfish Harvesting and Primary Contact fecal coliform at 14 cfu/100ml. Secondary Contact. fecal coliform at 100 cfu/100ml (Class B) and 200 cfu/100ml (Class C).	Same as proposed alternative but eliminate all secondary contact.
Simplicity (how easy is it for the reader to understand the rule?)	Low • The water quality standards use three different indicator organisms (fecal coliform, enterococci, and *E. coli*) to apply to fresh and marine waters..	Moderate • All classes use fecal coliform, but the numeric value varies. • However, the EPA has stated that it will not allow states to continue using fecal coliform as an indicator for contact recreation.	Low • The water quality standards use three different indicator organisms (fecal coliform, enterococci, and *E. coli*), but the secondary contact category is eliminated.

	Proposed Alternative	No-Action Alternative	Alternative with Lower Environmental Impact
Usability (can the alternative be used effectively to protect water quality?)	Moderate • *E. coli* and fecal coliform, the two indicators that will be used the most, are well-correlated but not identical. • Laboratories in Washington will have to learn to analyze for *E. coli* and enterococci. • Many entities have used fecal coliform for many years.	High • Laboratories have monitored for fecal coliform for many years. • Other programs that address water issues often use fecal coliform. • However, EPA has indicated that fecal coliform is not as good an indicator as *E. coli* and enterococci for protecting contact recreation.	Moderate • *E. coli* and fecal coliform, the two indicators that will be used the most, are well-correlated. • Laboratories in Washington will have to learn to analyze for *E. coli* and enterococci.
Level of Environmental Protection (this does not factor in issues of simplicity and usability addressed above)	Moderate • The illness rate for primary contact in fresh water is seven cases of gastrointestinal illness per 1000 swimmers and 10 illnesses per 1000 swimmers for secondary contact. In marine water, the illness rate for primary contact is 19 cases of gastrointestinal illness per 1000 swimmers and 22 illnesses per 1000 swimmers for secondary contact.	Moderate • The illness rate for primary contact in fresh waters for fecal coliform is estimated at seven cases of gastrointestinal illness per 1000 swimmers and 10 illnesses per 1000 swimmers for secondary contact. In marine water, the illness rates are similar to fresh water	High • Eliminating the secondary contact use and protecting all waters for primary contact would potentially reduce the number of illness.

1. Ammonia Criteria

Background

For more information on the ammonia criteria, please see the Department of Ecology's draft discussion document *Review of USEPA's 1999 Ammonia Criteria for Fresh waters*.

In high levels, ammonia is toxic to fish and other aquatic life. The actual numeric value of the ammonia criteria vary with temperature and pH. The criteria themselves are available in the existing water quality standards (WAC 173-201A-040) and in Ecology's *Review of USEPA's 1999 Ammonia Criteria for Fresh water.*

In 1999, the EPA published a revised update to the water quality standards for ammonia in fresh water. Both the chronic and the acute EPA 1999 recommended criteria are less stringent than Ecology's existing criteria.

Both the existing and the EPA recommended ammonia criteria are relatively complex to use. Both are expressed as an equation, and in each case the equation requires the knowledge of other water quality information to calculate the criteria for any individual waterbody. In addition to the complexity of the criteria equations, the criteria apply to areas where specific aquatic life uses exist, so each time the criteria are used the specific designated uses of a waterbody must be checked to determine which criteria equation apply.

Existing ammonia criteria are in WAC 173-201A-040. The proposed alternative ammonia criteria are in proposed WAC 173-201A-240.

Proposed Alternative

The proposed alternative is to use the existing chronic criteria for waters with salmonid habitat and use the EPA 1999 update criteria for all other situations.

Waterbodies	Criteria	
All fresh waters	Acute criteria	EPA 1999 update criteria
Fresh waters with no early life stages present and not designated as salmonid habitat	Chronic criteria	EPA 1999 update criteria for "fish early life stages absent"
Fresh waters with early life stages of non-salmonid fish species present and not designated as salmonid habitat	Chronic criteria	EPA 1999 Update criteria for "fish early life stages present"
All fresh waters with salmonid habitat as a designated use	Chronic criteria	Existing criteria for "salmonids present"

Ecology's review of the EPA 1999 update criteria found that they were appropriate for use in Washington's water with the exception of the chronic criteria for waters with salmonid habitat.

A paucity of data on effects of ammonia on early life stages of salmonids makes an assessment of the protectiveness of the new chronic criterion difficult to quantify. Because of insufficient data to quantify safe levels, effects levels from each research study were used separately to evaluate the EPA 1999 update criteria, instead of relying on a species mean (or other measure of central tendency) effects level to represent the effects level.

This analysis found that the chronic EPA 1999 update criteria for salmonid waters might be inappropriate. Ecology is proposing to continue to use its existing (and more protective) criteria in this situation.

For more information on the proposed alternative go to the Proposed Ammonia Criteria Decision Process Memo by Megan White.

No-Action Alternative

The no-action alternative is to use the existing ammonia criteria in all situations. The existing ammonia criteria are more protective than the EPA 1999 update criteria.

Alternative with Lower Environmental Impact

Ecology could have made a proposal that would have resulted in lower ammonia concentrations, but could find no scientific basis to support the need for such a proposal. Thus, for this issue, the alternative with lower environmental impact is equivalent to the existing No-Action Alternative discussed above.

Comparison of Alternatives –Criteria for Ammonia

	Proposed Alternative	No-Action Alternative	Alternative with Lower Environmental Impact
Summary of Alternative	Use existing chronic criteria for waters with salmonids. Use the EPA 1999 update criteria for other situations.	Use existing ammonia criteria in all situations.	The no action is the most protective.
Simplicity (how easy is it for the reader to understand the rule?)	Low • The criteria are very complex to calculate and apply. They require waterbody-specific chemistry and aquatic life information.	See the alternative with lower environmental impact	Low • The criteria are very complex to calculate and apply. They require waterbody-specific chemistry and aquatic life information.
Usability (can the alternative be used effectively to protect water quality?)	Moderate • These criteria can be used effectively to control ammonia discharges. Their complexity and the requirement for waterbody-specific information to use in the criteria calculation does not detract from their usefulness.	See the alternative with lower environmental impact	Moderate • These criteria can be used effectively to control ammonia discharges. Their complexity and the requirement for waterbody-specific information to use in the criteria calculation does not detract from their usefulness.
Level of Environmental Protection (do not factor in issues of simplicity and usability)	Moderate to High • Based on available data, this alternative is likely to provide high levels of protection to aquatic life in fresh waters.	See the alternative with lower environmental impact	High • The existing ammonia criteria are the most stringent of all the criteria considered in this review; therefore they will very likely provide the highest level of protection to aquatic life.

Miscellaneous

1. Selection of Criteria for Agricultural Water Supply

Background

For detailed information on agricultural water supply criteria, please see Ecology's *Establishing Surface Water Quality Criteria for the Protection of Agricultural Water Supplies – Draft Discussion Paper* (Department of Ecology publication number 00-10-073). This document contains an in-depth analysis of the technical issues associated with the alternatives discussed in this DEIS.

While the current water quality standards list agricultural water supply as a protected beneficial use, it does not clarify what level of water quality is needed. Ecology established a technical work group to identify water quality concerns that were a problem or likely to become a problem for irrigated agriculture in Washington. The primary goal was to establish criteria that would allow the unrestricted selection of crops and methods of agricultural water supply and protect the long-term health of soils, crops, and equipment.

Existing agricultural water supply criteria are in WAC 173-201A-030. The proposed alternative agricultural water supply criteria are in proposed WAC 173-201A-200.

Proposed Alternative

The proposed alternative includes narrative and numeric criteria. The criteria will apply to all waterbodies, since agricultural water supply is designated as a beneficial use for all waters. These criteria do not apply within irrigation projects.[7]

The following numeric criteria are an arithmetic average for the period of April 1-September 30:

[7] It should be noted that these criteria are only designed to protect irrigated agriculture. Other criteria to protect other uses, such as aquatic life, still apply.

Parameter	Criteria
Electrical conductivity	not to exceed 700 microsiemens per centimeter (uS/cm)
Bicarbonate	not to exceed 339 milligrams per liter (mg/L)
Total suspended solids	not to exceed 75 mg/L
pH	between 6.5 and 9.0 standard units

Agricultural water supply is only one of many uses. For waterbodies with other uses, such as salmonid habitat and water contact recreation, additional criteria to protect those uses also apply.

Ecology recognizes that the proposed criteria are largely preventative in nature, but also believes that maintaining high quality water supplies is important. The proposed criteria create a defined level of expected protection. In doing so, the criteria can be used to prevent the economic and social costs associated with a deterioration in water quality that will benefit Washington's farms and agricultural land into the future.

For more information on the proposed alternative go to the Proposed Agricultural Water Supply Criteria Decision Process Memo by Megan White

No-Action Alternative

The existing water quality standards do not have any numeric criteria for agricultural water supplies. Protection of agricultural water supplies is dependent on the narrative criteria.

Alternative with Lower Environmental Impact

An alternative with a lower environmental impact would be to set more prescriptive criteria to protect the use. This criteria to protect irrigation agriculture would be more stringent.

Parameter	Proposed Alternative – Agricultural Water Supply Criteria	Alternative with Lower Environmental Impact – Agricultural Water Supply Criteria	Units
Electrical conductivity	not to exceed 700	not to exceed 700	uS/cm
Bicarbonate	not to exceed 339	not to exceed 91.5	mg/L
Total suspended solids	not to exceed 75	not to exceed 50	mg/L
pH	between 6.5 and 9.0	between 6.5 and 8.4	Standard pH units

Comparison of Alternatives – Selection of Criteria for Agricultural Water Supply

	Proposed Alternative	No-Action Alternative	Alternative with Lower Environmental Impact
Summary of Alternative	Adopt numeric criteria for electrical conductivity, bicarbonate, total suspended solids and pH to protect agricultural water supply.	The existing criteria have narrative criteria but no numeric.	Adopt numeric criteria for electrical conductivity, bicarbonate, total suspended solids and pH that are more stringent than the criteria in the proposed alternative.
Simplicity (how easy is it for the reader to understand the rule?)	Low • The four numeric criteria are applied as an average across the irrigation season. • These criteria will apply to all waterbodies, since agricultural water supply is designated as a beneficial use for all waters	High • There are no numeric criteria.	Low • The four numeric criteria are applied as an average across the irrigation season. • These criteria will apply to all waterbodies, since agricultural water supply is designated as a beneficial use for all waters
Usability (can the alternative be used effectively to protect water quality?)	Moderate • Three of the four parameters (electrical conductivity, bicarbonate, and total suspended solids) are new parameters that would need to be applied.	Moderate • There are no numeric criteria. Implementing narrative criteria can be more difficult than applying specific numbers.	Moderate • Three of the four parameters (electrical conductivity, bicarbonate, and total suspended solids) are new parameters that would need to be applied.
Level of Envir. Protection (do not factor in issues of simplicity and usability)	Moderate • There might be a moderate impact to irrigated agriculture at pollution levels near the criteria	Low • There are no numeric criteria to protect agricultural water supply.	High • Designed to fully protect agricultural water supply.

2. Compliance Schedules to Address Relicensing of Existing Hydropower Dams

Background

Many hydroelectric facilities in Washington require water quality certifications (401 certification) in order to be relicensed by the Federal Energy Regulatory Commission (FERC). Ecology is responsible for certifying through a 401 certification that the hydroelectric facility will meet water quality standards. Achieving standards for these facilities in the near term may be very difficult and require significant investments of resources and time.

Existing compliance schedules are in WAC 173-201A-160. The proposed compliance schedule for dam relicensing is in proposed WAC 173-201A-510.

Proposed Alternative

Discussions were held internally at Ecology with staff and management to determine the best way to move forward with re-certification of dams. These discussions led to four major goals for re-certification:

1. Existing dams should have to endeavor to meet WQ standards – evaluate what it would take and implement those changes to the extent feasible.

2. Try to place clear offramps where the dam is not a cause of the problem or no options short of removal will help.

3. If the changes from the evaluation identified above are not practicable, do the work to establish site specific standards through a use attainability analysis that take advantage of "less than full support" language in federal regulations (CFR 131.10(g)(4)).

4. If dams commit to a process to work through items above, a 401 certification could be issued to comply with the standards.

Based on the above goals, language was drafted in a new sub-section of the implementation section to allow compliance schedules for dams under the circumstances described in the standards. Ecology believes that this explicit language will provide assurances and clarity to the regulated community and the public on how dams are required to comply with the standards.

For more information on the proposed alternative go to the Proposed Language Addressing Regulation of Dams Decision Process Memo by Megan White.

No-Action Alternative

In the existing standards there is no specific language for compliance schedules for dams. The existing language on generic compliance schedules could be used to address this issue. However, the language in the existing water quality standards is less specific and does not address all of the issues surrounding dams.

Alternative with Lower Environmental Impact

An alternative with lower environmental impact would be to require all dams to fully comply with water quality standards before the certifications are issued. Given the impact of dams on watersheds and the difficulties of making operational or structural improvements, it could take a great deal of time before the water quality standards are met. During that time, Ecology would not be able to issue water quality certifications.

Comparison of Alternatives – Compliance Schedules to Address Relicensing of Existing Hydropower Dams

	Proposed Alternative	No-Action Alternative	Alternative with Lower Environmental Impact
Summary of Alternative	The proposed alternative allows for compliance schedules for dams to be used in 401 certifications if they endeavor to meet standards.	The language in the existing standards on compliance schedules is not explicit for dams.	Require all dams to fully comply with water quality standards before the certifications are issued.
Simplicity (how easy is it for the reader to understand the rule?)	Low • There is a series of steps that must be included in the compliance plan in order to ensure beneficial uses are protected.	Moderate • The existing compliance schedule language is for general application, and does not have different language for dams. Several steps still need to occur.	High • All dams would have to fully comply with the water quality standards.
Usability (can the alternative be used effectively to protect water quality?)	Moderate • A compliance schedule allows dams to receive a water quality certification while implementing a plan to meet water quality standards.	Moderate • It is not explicit about how compliance schedules can be used for dams relicensing.	Low • All dams would have to fully comply with the water quality standards before Ecology could issue a 401 certification for relicensing. Since this is not technically possible in the near term for many dams, certification would be delayed, which would in turn delay the ability of Ecology to place requirements on dams through the permit process.

	Proposed Alternative	No-Action Alternative	Alternative with Lower Environmental Impact
Level of Environmental Protection (this does not factor in issues of simplicity and usability addressed above)	Moderate • Allowing dams more time to meeting water quality standards will, in many cases, allow dam operators to make better and more significant changes in order the meet water quality standards. • If water quality standards are not met beneficial uses may be harmed.	Moderate • Depending on how the existing water quality standards are interpreted, compliance schedules under the existing standards may be more or less protective than under the proposed alternative.	Low • This alternative is impractical for many dams, therefore it would be very difficult to implement, and would result in delays and stalemates between Ecology and the regulated dam owner. The sooner dams strive to meet water quality standards, the sooner beneficial uses (such as aquatic life) will be protected.

3. Allowance for Irreversible Human Structural Changes

Background

Major hydrological modifications, such as large dams and levies, have significant effects on water quality. In many cases, these human-created modifications are almost irreversible. There is considerable debate on how to address these human structural changes.

The proposed alternative for human structural changes that cannot be effectively remedied is in proposed WAC 173-201A-200 and 260.

Proposed Alternative

The proposed alternative recognizes that in some situations, criteria cannot be met due to human structural changes that cannot be effectively remedied. This would include structural changes such as large dams and major levies designed to protect cities.

The proposed alternative (WAC 173-201A-260(2)) states:

> It is recognized that portions of many waterbodies cannot meet the assigned criteria due to the natural conditions of the waterbody. When a waterbody does not meet its assigned criteria due to natural climatic or landscape attributes, or due to human structural changes that cannot be effectively remedied (as determined consistent with the federal regulations at 40 CFR 131.10(g)(3) and (4)), then alternative estimates of the attainable water quality conditions, plus any further human effects allowance specified in this section for when natural conditions are above a numeric criteria, may become an alternative criteria target for a waterbody.

The federal regulations (40 CFR 131.10(g)(3) and (4)) referenced in this section is:

> States may remove a designated use which is not an existing use, as defined in Sec. 131.3, or establish sub-categories of a use if the State can demonstrate that attaining the designated use is not feasible because:…
>
> (3) Human caused conditions or sources of pollution prevent the attainment of the use and cannot be remedied or would cause more environmental damage to correct than to leave in place; or
>
> (4) Dams, diversions or other types of hydrologic modifications preclude the attainment of the use, and it is not feasible to restore the waterbody to its original condition or to operate such modification in a way that would result in the attainment of the use….

No-Action Alternative

The existing water quality standards do not address human structural changes that cannot be effectively remedied. It is implied, therefore, that there is no allowance for those effects in the existing water quality standards.

Alternative with Lower Environmental Impact

- An alternative with a lower environmental impact would be not giving an allowance to human structural changes that cannot be effectively remedied. In this alternative, all human-created impacts would have to meet water quality standards. In theory, this would mean more waters would fully support beneficial uses.

Comparison of Alternatives – Allowance for Irreversible Human Structural Changes

	Proposed Alternative	No-Action Alternative	Alternative with Lower Environmental Impact
Summary of Alternative	If a waterbody does not meet temperature or dissolved oxygen criteria due to human structural changes that can not be effectively remedied then human actions considered cumulatively may not exceed temperature criteria by more than 0.3C	Current standards do not address irreversible human effects.	Do not give an allowance to irreversible human effects.
Simplicity (how easy is it for the reader to understand the rule?)	Moderate • Provides language to allow alternative criteria to be set.	Moderate • There is no specific language on irreversible human structures.	High • Language would be added to make it clear that there is no allowance for irreversible human structures.
Usability (can the alternative be used effectively to protect water quality?)	Moderate • Determining which human structural changes can and which cannot be effectively remedied might be very difficult and controversial.	Low • Forcing activities that cannot meet standards to meet the standards would be problematic. Time and resources would be wasted attempting to solve problems that are technically or politically irreversible. Such resources would otherwise be directed to improving conditions to the extent possible	Low • Forcing activities that cannot meet standards to meet the standards would be problematic. Time and resources would be wasted attempting to solve problems that are technically or politically irreversible. Such resources would otherwise be directed to improving conditions to the extent possible

	Proposed Alternative	No-Action Alternative	Alternative with Lower Environmental Impact
		given the existence of these structures.	given the existence of these structures.
Level of Environmental Protection (this does not factor in issues of simplicity and usability addressed above)	Moderate • Accepting that some human actions are irreversible will allow the water quality standards to function better. By including the allowance for some human structural changes, Ecology and other entities can focus on the human activities that can be improved.	High • All human activities must fully comply with the water quality standards.	High • All human activities must fully comply with the water quality standards. • It is not technically feasible to meet water quality standards without the removal of these structures.

4. Application of the Dissolved Oxygen and Temperature Criteria

Background

Ecology and other entities establish programs to prevent the dissolved oxygen and temperature criteria from being violated. They also develop water clean-up plans to improve dissolved oxygen and temperature in waterbodies that are not meeting the criteria. Often, complex models and statistical analyses are needed to establish these programs. This is due in part to the need to account for the year to year variability in dissolved oxygen levels and stream temperature. Dissolved oxygen and temperature variations are due to a number of factors, including climatic temperature cycles, rainfall, snow pack, ground water, and human influences.

The models and statistical analyses for complying with the dissolved oxygen and temperature criteria could be applied in many different ways. For example, they could be designed so the waterbody would meet the criteria every year (even the hottest potential years) or to just the average year. Obviously, deciding how to apply the criteria could make a big difference on the requirements on human activities that ensure the criteria would be met.

Previously, Ecology had proposed rule language based on "unusually warm weather" that was attempting to address extreme air temperature events. Exemptions would have been granted during certain periods of unusually warm weather. However, after extensive analysis and public comment, Ecology found that its proposal had technical problems that prevented it from functioning properly. The unusually warm weather exemption also added levels of complexity and uncertainty for the regulated community and created unnecessary obstacles for developing effective TMDLs. Ecology believes the new proposal will partially address the rare, extreme events without the complexity and uncertainty of the old proposal.

In the old proposal, unusually warm weather would have been calculated by Ecology for specific areas of the state. It was based on the 7-DADMax air temperatures. An unusually warm weather exemption would occur, on average, once each decade. Exceeding the numeric temperature or dissolved oxygen criteria would not be deemed a violation if it occurred during a period of unusually warm weather.

The exemption would have only applied during the time when the 7-DADMax air temperature is unusually warm. It would not have applied all year. A determination of whether an exemption is warranted due to unusually warm weather would have been made as follows:

(i) Calculate the 7-Day Average Daily Maximum (7-DADMax) air temperatures over the entire historic record;
(ii) Determine the hottest 7-DADMax air temperature for each year;
(iii) Calculate the 90th percentile value of those annual hottest 7-DADMax air temperatures;

(iv) Exceeding the numeric temperature criteria would not have been deemed a violation if it occurred during a period when the 7-DADMax air temperature in that region of the state is warmer than the 90th percentile value of annual hottest 7-DADMax air temperatures [as calculated in (iii)].

Proposed Alternative

The proposed alternative states:

- Temperatures are not to exceed the criteria at a probability frequency of more than once every ten years on average.
- Concentrations of dissolved oxygen are not to fall below the criteria at a probability frequency of more than once every ten years on average.

This means that the models and statistical analyses would be designed so the waterbody would meet the criteria every year over a typical ten-year period. The models and statistical analyses would take into account the normal year-to-year fluctuations, but not the rarer and extreme cases such as severe heat waves or periods of extreme draught.

No-Action Alternative

In the existing standards, there is no language addressing probability frequencies. It simply states that waterbodies must meet the criteria. While this is arguably more protective of aquatic life, it makes modeling and permitting very difficult. Attempting to determine what a stream temperature would be in an absolutely worse-case scenario (hottest temperature, lowest snow pack, and least rainfall ever recorded) is problematic. The odds of an absolutely worse-case scenario actually occurring would also be very unlikely. In practice, a probability frequency once every ten years (equal to the proposed alternative) is already being used.

Alternatives with Lower Environmental Impact

An alternative with a lower environmental impact would use the same concept as the proposed alternative but change the ten-year interval to twenty years. It would state:

- Temperatures are not to exceed the criteria at a probability frequency of more than once every twenty years on average.
- Concentrations of dissolved oxygen are not to fall below the criteria at a probability frequency of more than once every twenty years on average.

This means that the models and statistical analyses would be designed so the waterbody would meet the criteria every year over a typical twenty-year period. In this alternative, the models and

statistical analyses would have to consider slightly more unusual events that would typically occur over a twenty-year period compared to the proposed alternative. Therefore, the models and statistical analyses would probably design pollution control activities that have less impact on dissolved oxygen and temperature and thus would be slightly more protective.

Comparison of Alternatives – Application of the Dissolved Oxygen and Temperature Criteria

	Proposed Alternative	No-Action Alternative	Alternative with Lower Environmental Impact
Summary of Alternative	Temperatures are not to exceed the criteria (and dissolved oxygen is not to fall below the criteria) at a probability frequency of more than once every ten years on average.	In the existing standards, there is no language addressing probability frequencies. It simply states that waterbodies must meet the criteria.	Temperatures are not to exceed the criteria (and dissolved oxygen is not to fall below the criteria) at a probability frequency of more than once every twenty years on average.
Simplicity (how easy is it for the reader to understand the rule?)	Low • Probability frequencies and other statistical tools are difficult to understand.	High • In the existing standards, there is no language addressing probability frequencies.	Low • Probability frequencies and other statistical tools are difficult to understand.
Usability (can the alternative be used effectively to protect water quality?)	Moderate • In order to use the proposed rule language, fairly complex modeling or statistical analyses are required.	Low • Modeling for an absolute worse-case scenario is very difficult.	Moderate • In order to use the proposed rule language, fairly complex modeling or statistical analyses are required.

	Proposed Alternative	No-Action Alternative	Alternative with Lower Environmental Impact
Level of Environmental Protection (this does not factor in issues of simplicity and usability addressed above)	Moderate • As a result of modeling or statistical analyses using the proposed language, the criteria would be met every year during a typical ten-year period. However, the criteria might not be met in more extreme situations.	High • Modeling and statistical analyses would design programs where waterbodies meet the criteria every year.	Moderate • As a result of modeling or statistical analyses using the proposed language, the criteria would be met every year during a typical twenty-year period. However, the criteria might not be met in more extreme situations.

Affected Environment, Significant Impacts and Mitigation Measures

Affected Environment

The purpose of the water quality standards is to set criteria to be used to fully protect beneficial uses of all of Washington's rivers, streams, lakes, marine waters, and other waters of the state. The beneficial uses that are specifically protected include:

- **Aquatic Life.** The aquatic life beneficial use includes salmonids (salmon, trout, and char), other fish, macroinvertebrates, other animals, and plants. All life-stages of aquatic life, including spawning, rearing, and migrating, are protected. Salmonids, especially those that are threatened or endangered, usually receive the most attention. In many cases, they are also the most sensitive species.

- **Water Contact.** The water contact beneficial use is designed to protect those who work or play in Washington's waters. This includes swimming, wading, boating, fishing, and other activities.

- **Agricultural, Domestic, and Industrial Water Supply.** Water quality must be of high enough quality so water can be used for these activities.

- **Commerce and Navigation.** Water quality must be of high enough quality so water can be used for these activities.

- **Wildlife.** The wildlife use protects terrestrial plants and animals that rely on rivers, streams, lakes, and marine water for survival.

- **Fishing and Harvesting.** The fishing and harvesting use protects water quality at levels that allow for fishing, harvesting, and consumption of aquatic plants and animals (such as fish and shellfish).

The proposed changes to the water quality standards could affect all of these uses. Aquatic life, water contact, and agricultural water supply are most directly affected by the proposal.

Many of Washington's waterbodies are not fully protecting all of these uses. A list of those waterbodies that are impaired, often called the 303(d) List, is published by Ecology. The 303(d) List is available at www.ecy.wa.gov/programs/wq/303d.

Pollution that affects these uses comes from point sources (such as industrial facilities and waste water treatment plants) and non-point sources (such as stormwater runoff).

Significant Impacts

The proposed changes to the water quality standards set specific criteria that if met will fully protect the uses listed in the previous section. However, significant controversy exists whether each part of the proposal will, in fact, fully protect each use. The proposal and the possible significant impacts are addressed in this section.

For more information on the potential effects of these proposed changes, please see the following documents:

- *Water Quality Antidegradation Implementation Plan – Draft Discussion Paper* (Department of Ecology publication number 00-10-069).
- *Evaluating Standards for Protecting Aquatic Life in Washington's Surface Water Quality Standards – Temperature Criteria – Draft Discussion Paper and Literature Summary* (Department of Ecology publication number 00-10-070)
- *Evaluating Standards for Protecting Aquatic Life in Washington's Surface Water Quality Standards – Dissolved Oxygen – Draft Discussion Paper and Literature Summary* (Department of Ecology publication number 00-10-071)
- *Setting Standards for the Bacteriological Quality of Washington's Surface Water – Draft Discussion Paper and Literature Summary* (Department of Ecology publication number 00-10-072)
- Department of Ecology's draft discussion document *Review of USEPA's 1999 Ammonia Criteria for Fresh waters*
- *Establishing Surface Water Quality Criteria for the Protection of Agricultural Water Supplies – Draft Discussion Paper* (Department of Ecology publication number 00-10-073)

Restructuring the Standards

The structure of the standards connects waterbodies to their uses and criteria. If the restructuring of the standards is not done appropriately, the entire water quality standards could be affected, and in the worse-case scenario, the protected uses might suffer.

Antidegradation Implementation Plan

The antidegradation implementation plan protects water quality from unnecessary degradation. It affects all of the beneficial uses in the water quality standards. If the antidegradation plan is ineffective, all uses could suffer. This includes aquatic life, wildlife, water contact, agricultural

water supply, industrial water supply, domestic water supply, commerce and navigation, fishing and harvesting, and aesthetics.

Temperature Criteria

Temperatures criteria that are set too warm or are inappropriately applied might detrimentally affect aquatic life. The temperature criteria were primarily based on the needs of salmonids. They are key species and are usually the most sensitive species.[8] If aquatic life is affected, it could also affect other wildlife that is dependent on aquatic life as a food source.

Dissolved Oxygen Criteria

Dissolved oxygen criteria set too low or inappropriately applied might detrimentally affect aquatic life. The dissolved oxygen criteria were primarily based on the needs of salmonids. They are key species and are often the most sensitive species. The effects on macroinvertebrates, which are also very sensitive to dissolved oxygen, were also considered. If aquatic life is affected, it could also affect other wildlife that is dependent on aquatic life as a food source.

Bacteria Criteria

The bacteria criteria are designed to protect water contact. If the bacteria criteria are set too high or inappropriately applied, more people who recreate or work in the water might become ill.

Ammonia Criteria

If ammonia criteria are set too high or are inappropriately applied, it might detrimentally affect aquatic life. If aquatic life is affected, it could also affect other wildlife that is dependent on aquatic life as a food source.

[8] Other aquatic life, such as macroinvertebrates and amphibians, are also affected by temperature. Tailed frogs and torrent salamanders are examples of temperature-sensitive organisms. Criteria specifically designed to protect these organisms are not being proposed due to the lack in data detailing their temperature requirements. If the temperature criteria based on the key fish species are met, it should provide a healthy temperature for most other aquatic life.

Miscellaneous

Agricultural Water Supply. If agricultural water supply criteria are inappropriately set or applied, it might detrimentally affect irrigators. The agricultural water supply criteria were designed to protect soils, crops, and infrastructure of irrigated agriculture.

Compliance Schedules for Dams. If the compliance schedules for dams are inappropriately constructed or applied, all beneficial uses might be affected. Aquatic life, and especially salmonids, is most likely to be affected.

Allowance for Irreversible Human Structural Changes. If the allowance is inappropriately constructed or applied, all beneficial uses might be affected. Depending on the human structural change that is allowed, different uses might be affected. Aquatic life would most likely be affected.

Application of the Dissolved Oxygen and Temperature Criteria. If the dissolved oxygen and temperature criteria are misapplied, it might detrimentally affect aquatic life.

Mitigation Measures

Mitigation measures should be identified that will reduce or eliminate the adverse environmental impacts of a proposal. Mitigation measure should be reasonable and capable of being accomplished. According to the SEPA rules (WAC 197-11-768), "mitigation" means:

(1) Avoiding the impact altogether by not taking a certain action or parts of an action;
(2) Minimizing impacts by limiting the degree or magnitude of the action and its implementation, by using appropriate technology, or by taking affirmative steps to avoid or reduce impacts;
(3) Rectifying the impact by repairing, rehabilitating, or restoring the affected environment;
(4) Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action;
(5) Compensating for the impact by replacing, enhancing, or providing substitute resources or environments; and/or
(6) Monitoring the impact and taking appropriate corrective measures.

Most of the possible mitigation measures were addressed in the evaluation of alternatives. Since the water quality standards include numeric criteria, narrative criteria, and implementation, most issues normally considered “mitigation measures” can be addressed as part of the rule.

There are, however, five mitigation measures outside the scope of the water quality standards that could help offset any adverse environmental impact of the water quality standards. These mitigation measures involve Ecology, but are also highly dependent on other public and private entities and on available funding.

Increased Monitoring

Ecology and other public and private entities can increase their monitoring efforts as a mitigation measure. The negative effects of improperly set criteria will be compounded by sporadic monitoring. A robust monitoring program will lessen any adverse environmental impact and provide clarity on whether waterbodies are impaired.

Increased monitoring includes monitoring more waterbodies and more continuous monitoring. For example, the lowest dissolved oxygen levels often occur early in the morning before monitoring crews arrive. Continuous dissolved oxygen monitoring devices, while currently unreliable for long periods of time, might in the future solve this problem. Continuous monitoring devices will catch the worst conditions, even when monitoring crews are not present. Ecology and other entities that conduct monitoring should work to ensure that their monitoring programs are as robust as possible.

Increased Water Clean-Up

Many entities, including Ecology, are working to clean up polluted waterbodies. Improving water quality is an extremely important mitigation measure to offset any adverse environmental impact from water quality standards. Having entire healthy watersheds with good water quality that provides good habitat for aquatic life will help mitigate any minor deficiency associated with setting inadequate water quality standards.

For example, if overall water quality is generally poor, an improperly set temperature criteria could have severe effects on salmon populations due to the synergistic effects of temperature with other pollutants. However, if the water quality is generally healthy, salmon populations would be more resilient and more able to survive despite an improperly set temperature criteria.

Increased Pollution Prevention

There are many programs designed to prevent pollution from reaching surface waters. These programs address point sources and non-point sources of pollution. For example, these programs have led to Best Management Practices (BMPs) for stormwater and forestry that are designed to protect water quality.

Many parts of the water quality standards rely directly or indirectly on the successes of these programs. For example, the antidegradation implementation plan directs entities to use BMPs. The antidegradation implementation plan can only be successful if other programs' BMPs can protect water quality.

The water quality standards do not address every potential source of pollution, so other entities will have to voluntarily ensure that their pollution prevention programs are working properly in order to protect Washington's water quality.

Systematic Process for Updating Water Quality Standards

States are required to review their standards every three years. The issues in this update have been very complex and controversial and have resulted in the Ecology delaying the adoption of these standards. We have also delayed addressing other parts of the standards that need review and possible update. If Washington could develop a systematic way to address updating of standards, it would potentially take care of improperly set standards.

Training on the Water Quality Standards

The proposed changes to the water quality standards include new criteria and new concepts. Federal, state, and local governments and other entities all implement the water quality standards, and must understand and use these new criteria and concepts. By providing training, Ecology can assist entities and make sure the water quality standards are implemented correctly and in a timely fashion.

Distribution List

The scoping document and this draft EIS was sent to approximately 3900 people and organizations. The organizations are:

A. A. Rich & Associates
A. F. Murch Company
A.C. Kindig & Co.
AAA Monroe Rock Corp.
ABAM Consulting Engineers
Absorption Corporation
Abundant Life Seed Foundation
Acme Materials
Adams Conservation District
Adams County Building & Planning Dept.
Adams County Health District - Ritzville
Adams County Noxious Weed Control Bd.
Adams County Public Works
Adams County Weed District No. 1
Admiralty Audubon Society
Adolfson Associates
Adpro Litho, Inc.
Adrian Brown Consultants
Advanced Technology Laboratories
Advanced Water Systems
Aeneas Lake Irrigation District
Aerobond & Aerocomposites Corp.
AGI Technologies
Agricultural Division, Cibagiagy Corporation
Ahtanum Irrigation District
Air Products & Chemicals Inc.
Air Program, Department of Ecology
Airco Distributor Gases
AJGB Environmental Engineering
Alaska Dept. of Enviro Conservation
Albert Jensen & Sons Inc.
Alder Lake Park
Alder Powerhouse Uitlities
Alderbrook Inn Resort
Alderwood Water District
Algona Pacific Library
Allan Brothers Fruit Company
Allseasons Aquafarms Inc.
Allweather Wood Treaters
Alta Lake Water Level Association
Alternatives for the San Juans
Alton Avenue - Seattle Office, Sierra Club
Aluminum Co. of America
American Cetacean Society
American Cyanamid
American Engineering Corp.
American Lake Improvement
American Lung Association of Washington
American Marine Contractors
American Oceans Campaign
American Rivers, Inc.
Anacortes American
Anacortes Office, Shell Oil Company
Analytical Resources, Inc.
Analytical Tech, Inc.
Anderson & Associates
Anderson & Perry
Anderson Engineering
Anderson Marine Repair
Andrus & Roberts Produce Co.
Angle Lake Shore Club
AOL Express
Appleway Packing Inc.
Applied Ecosystems Services
Applied Environmental Services, Inc.
Applied Physics Lab, University of Washington
Aquatic Environmental Science
Aquatic Resources Conservation Group
ARCO (Pier 11) Term. Annex
ARCO / Blaine Office
ARCO Marine Inc. of Bellingham
Arlington Office, Trout Unlimited
Arne Larsson Marine Painting
Artisian Finishing Systems Inc.
ASARCO Incorporated
ASCI Corporation
Ash Grove Cement West, Inc.
Asotin County
Asotin County Conservation District
Asotin County Cooperative Extension
Asotin County Health District
Asotin County Noxious Weed Control Bd.
Asotin County Planning Commission
Assessment Services, Department of Health
Assistant Manager
Assistant to the Governor
Associated Earth Sciences
Associated Earth Sciences, Inc.
Associated Petroleum
Associated Sand & Gravel Company
Association For Black Lake Environment
Association of Bainbridge Comm.
Association of Lake Roesiger
Association of Washington Business
Association of Washington Cities
Ater Wynne Hewitt Dodson & Skerritt, LLP
Atlas Foundry & Machine Company
Auburn Parks and Recreation
Auburn Plant, Boeing
Auvil Fruit Co Inc.
Aviation Planning, Port of Seattle
B & J Fiberglass
B.C. Ministry of Environ. Lands & Parks
B.C. Ministry of Environment
Bainbridge Island Office, Boeing Company
Baird Boat Company Inc.
Baker Commodities
Baker Produce Inc.
Ball-Incon Glass Pkg Corp.
Bardin Farms Corp.
Barghausen Engineers
Barnaby Slough, Department of Fish & Wildlife
Barrett Consulting Group
Basic American Foods Division
BC Environment, Lands & Parks
Beatrice Cheese Inc.
Beaver Lake Community Club
Beaver Lake Protection Association
Beebe Orchard Co.
Beehive Irrigation District
Bellevue Community College
Bellevue Office, David Evans & Associates
Bellevue Office, EPA
Bellevue Office, Montgomery Watson
Bellevue Office, Puget Sound Energy
Bellevue Office, Washington Trollers Assn.
Bellevue Office, Washington Trout
Bellingham Cold Storage
Bellingham Herald
Bellingham Marine Industries, Inc.
Bellingham Office, League of Women Voters
Benson Ranches Inc.
Benton City Water
Benton County Cooperative Extension
Benton County Noxious Weed Control Board
Benton County Planning & Building Dept.
Benton County Public Works
Benton County PUD
Benton County Weed Dist. No. 1
Benton Irrigation District
Benton Rural Electric Association
Benton-Franklin Council of Governments
Benton-Franklin Health District
Bentzen Inc.
Berger Partnerships
Berghoff Orchards
Berryman & Henigar
Bethel School District
Bexar Environmental Consulting
BF Goodrich Aerospace
Bill Gill Lincoln-Mercury Inc.
Billings Office, Conoco
Bingen Office, Columbia River United
Bio/West, Inc.
Biology, Central Washington University
Bi-State Columbia River Gorge Comm.
Black & Veatch Waste Science & Tech
Black Hills Audubon Society
Black Lake
Black Lake Neighborhood Association
Blake Island State Park
Bloom Forecasting
Blue Lake Water Users Association
Blue Mountain Audubon Society
Blue Star Growers
BNSF Railroad (Burlington Northern)
Boateng & Associates
Boeing Company
Bogies Truck Stop
Boise Cascade - Olympia
Boise Cascade - Wallula
Boise Cascade Corporation
Boise Office, J. R. Simplot Co. Food Group
Bornstein Seafoods Inc.
Borton & Sons Inc.
Boston Harbor Wastewater Treatment Plant
Bothell Office, EMCON
Boundary Fish Company
Boundary Office, Seattle City Light
Bovay Northwest, Inc.
BP Oil Company - Renton
Bremerton Parks & Recreation
Bremerton Power Squadron
Bremerton Yacht Club
Bremerton-Kitsap Co Health District
Bremerton-Kitsap County Health Dept.
Brewster Flat Irrigation District
Brewster Heights Packing
Bricklin & Gendler
Bridgeport Irrigation District
Broetje Orchards
Brooks Manufacturing
Brookside Division, Safeway Stores
Brown & Caldwell Consultants
Buck & Gordon
Building Industry Assoc. of WA
Burbank Irrigation District #4
Bureau of Surface Water Management
Burlington Northern Railroad
Burns Bros.
Bush, Roed & Hitchings, Inc.
C. M. Holtzinger
CA Regional Water Quality Control Brd.
Cadman Inc.
Cahabe River Society
Cairncross & Hempelmann
Caldwell Environmental Consulting

Calhoun Fruit & Produce Inc.
Calif. Regional Water Quality Control
California Div. of Water Quality
Camas Tech Center, James River Corp.
Camp Dresser and McKee
Canadian Consulate
Cap Santa Marine
Capital Regional District
Caribou Ranches, Inc.
Carkeek Community Action Project
Carlson Salmon Farm
Carnation Co.
Carnation Farms Company
Carriage House Fruit
Cascade Analytical
Cascade Aqua Farms
Cascade Bicycle Club
Cascade Columbia Foods
Cascade Earth Sciences / Spokane Office
Cascade Energy Homes, Inc.
Cascade Irrigation District
Cascade Seafoods
Cascadian Fruit Shippers
Cashmere Fruit Exchange
Cathcart Landfill
CB III Productions
CDID #1
Cedar Creek Corrections Center
Cedarock Consultants
Center for Environmental Law & Policy
Center for Marine Conserv.
Central Klickitat Conservation District
Central Pre-Mix Concrete Co.
Central STP, City of Tacoma
Central Washington Fairgrounds
Centralia Mining Company
Centralia Office, Pacific Power & Light
Century 21 Products Inc.
Century West Engineering Corp./Spokane
Cerro Gordo Town Forum
CH2M Hill Northwest
CH2M Hill/Bellevue Office
Chambers Creek STP
Chambers Lake Environment & Neighborhood
Chehalis Conferated Tribes
Chehalis Office, Puget Sound Energy
Chehalis River Council
Chelan County CD
Chelan County Conservation District
Chelan County Council of Governments
Chelan County Noxious Weed Control Bd.
Chelan County Planning Dept.
Chelan County Public Utility District
Chelan Falls Office, Cascadian Fruit Shippers
Chelan Foothills Inc.
Chelan PUD
Chelan River Irrigation District
Chelan-Douglas Health District
CHEMCO, Inc.
Chemical Processors - Washougal
Chesapeake Bay Foundation
Chevron Research & Tech. Co.
Chevron Research & Technology Co.
Chevron USA - Richmond Beach
Chevron USA Products
Chevron USA, Inc.
Chief Wenatchee
Chinook Indian Tribe
Christensen Petroleum Co.
CITE
Citizens Against Woodstove Fumes
Citizens for Clean Industry
Citizens for Sensible Development
Citizens with Environmental Concerns
City Light
City of Aberdeen
City of Airway Heights
City of Algona
City of Anacortes
City of Anacortes Public Works
City of Arlington
City of Asotin
City of Auburn
City of Bainbridge Island
City of Battle Ground
City of Bellevue
City of Bellingham
City of Bellingham Public Works
City of Benton City
City of Bingen
City of Black Diamond
City of Blaine
City of Bonney Lake
City of Bothell
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City of Brewster
City of Bridgeport
City of Brier
City of Buckley
City of Burien
City of Burlington
City of Camas
City of Carnation
City of Cashmere
City of Castle Rock
City of Centralia
City of Chehalis
City of Chelan
City of Cheney
City of Chewelah
City of Clarkston
City of Cle Elum
City of Colfax
City of College Place
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City of Gold Bar
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City of Grand Coulee
City of Grandview
City of Granite Falls
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City of Hoquiam
City of Ilwaco
City of Issaquah
City of Kahlotus
City of Kalama
City of Kelso
City of Kennewick
City of Kent
City of Kettle Falls
City of Kirkland
City of Kittitas
City of La Center
City of Lacey
City of Lake Forest Park
City of Lake Stevens
City of Lakewood
City of Langley
City of Leavenworth
City of Long Beach
City of Longview
City of Lynden
City of Lynnwood
City of Mabton
City of Marysville
City of McCleary
City of Medical Lake
City of Medical Lake Public Works
City of Medina
City of Mercer Island
City of Mesa
City of Mill Creek
City of Milton
City of Monroe
City of Montesano
City of Morton
City of Moses Lake
City of Mossyrock
City of Mount Vernon
City of Mountlake Terrace
City of Moxee
City of Mukilteo
City of Napavine
City of Newcastle
City of Newport
City of Nooksack
City of Normandy Park
City of North Bend
City of North Bonneville
City of Oak Harbor
City of Oakville
City of Ocean Shores
City of Okanogan
City of Olympia
City of Omak
City of Oroville
City of Orting
City of Othello
City of Pacific
City of Palouse
City of Pasco
City of Pateros
City of Pomeroy
City of Port Angeles
City of Port Orchard
City of Port Orchard (KCSD#5)
City of Port Townsend
City of Portland
City of Poulsbo
City of Prescott
City of Prosser
City of Pullman
City of Puyallup
City of Quincy
City of Raymond
City of Redmond
City of Redmond Public Works
City of Renton
City of Republic
City of Richland
City of Ridgefield
City of Ritzville
City of Rock Island
City of Roslyn
City of Roy
City of Royal City
City of SeaTac
City of Seattle
City of Seattle Public Utilities
City of Sedro Woolley
City of Selah
City of Sequim
City of Shelton
City of Shoreline
City of Snohomish
City of Snoqualmie
City of Soap Lake
City of South Bend
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City of Tacoma Planning Dept.
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City of Tukwila
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City of University Place
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City of Waitsburg
City of Walla Walla
City of Wapato
City of Warden
City of Washougal
City of Wenatchee
City of West Richland
City of Westport
City of White Salmon
City of Winlock
City of Woodinville
City of Woodland
City of Woodway
City of Yakima
City of Yakima Planning Department
City of Yelm
City of Zillah
Clallam Bay Corrections Center
Clallam Co. Streamkeepers
Clallam Conservation District
Clallam County Board of Commissioners
Clallam County Conservation District
Clallam County Health Department
Clallam County League of Women Voters
Clallam County Parks Department
Clallam County Planning Division
Clallam County Public Works Dept.
Clallam County PUD
Clark County
Clark County Dept. of Community Dev.
Clark County Parks
Clark County Public Services
Clark County Public Utilities
Clark County Public Works
Clark County Water Quality
Clark County Weed Management
Clark Public Utility
Clark-Skamania Fly Fishers
Cle Elum City Council
Cle Elum Office, USFS
Cle Elum Public Works
Clearwood Comm. Assoc.
Clearwood Community Association

Cleveland Office, BP Oil
CM Holtzinger Fruit
CMDE HW I CORPS
Coalition for Clean Water
Coalition of Washington Communities
Coast Oyster Company
Coastal Manufacturing Inc.
Coastal Writing Service
Cocolalla Lake Association
Collins Fruit Co.
Colmac Industries Inc.
Colorado, National Park Services
Colson Rendering Inc.
Columbia Asphalt & Gravel Inc.
Columbia Colstor Inc - Wenatchee
Columbia Conservation District
Columbia County Health Department
Columbia County Noxious Weed Control Brd
Columbia County Planning Department
Columbia Feeders, Inc.
Columbia Foods Inc.
Columbia Fruit Packers
Columbia Irrigation District
Columbia Lighting Inc.
Columbia Reach Packers
Columbia River Carbonates
Columbia River Fishermen's Prot. Union
Columbia River Inter-Tribal Fish Comm.
Columbia River Study
Columbia River United
Columbia Vista Corp.
Columbian Publishing
Colville Confederated Tribes
Colville National Forest
Colville National Forest, USDA Forest Service
Colville Tribal Headquarters
Cominco American, Inc.
Commencement Bay Keeper
Commercial Cold Storage
Commercial Marine Construction
Commissioners, Town of La Conner
Community & Env. Defense Svc.
Community Services, City of Seattle
Conastoga, Rovers & Assoc.
Concrete Northwest
Concrete Technology Corporation
Confederated Tribes of the Umatilla
Congdon Orchards, Inc.
Conservation Commission
Consolidated Dairy Products
Consolidated Irrigation District
Consolidated Irrigation District #14
Consolidated Support Services
Consumers United Food Safety
Continental Credit Services Inc.
Continental Lime Inc.
Corporate Offices, Pendleton Woolen Mills
Cosmopolitan Engineering Group Inc.
Cossack Caviar, Inc.
Costco Wholesale (Photo Lab)
Cottonwood Acclamation Pond
Coulee Dam Office, Lake Roosevelt Forum
Council for Land Care & Planning
Council of Governments, Cowlitz-Wahkiakum
Cove Owners Moorage Assn.
Coventry Vale Winery
Covey Run Vintners
Covich Williams Co.
Cowiche Growers Inc.
Cowiche Sewer District
Cowlitz Conservation District
Cowlitz County Dept. of Bldg & Planning
Cowlitz County Health Department
Cowlitz County Natural Resource Council
Cowlitz County Noxious Weed Control Bd.
Cowlitz County P.U.D.
Cowlitz County Public Works
Cowlitz County Ryderwood STP
Cowlitz Falls Dam
Cowlitz Game Anglers
Cowlitz H20 Pollution Control
Cowlitz Indian Tribe
Cowlitz Water Pollution Control
Cowlitz-Wahkiakum Co. Cooperative Ext.
Cowlitz-Wahkiakum Governmental Conf.
Coyne and Associates
Coyne-Hanon
Crane & Crane, Inc.
Credence Clear Lake Revival Assn.
Crescent Bar Inc.
CREST
Crisp 'N Spicy Growers Inc.
Crown Cork & Seal
Crown West Realty, LLC
Crystal Mountain Inc.
CSO Partnership
CSR Marina
Cubberley Packing Co.
Cunningham Environmental Consulting
Curlew Lake Assn.
Cushman #1 Power Plant
Custom Apple Packers Inc.
Daily Journal of Commerce
Daishowa America Ltd.
Dakota Fisheries Inc.
Dames & Moore - Seattle Office
Darigold
Darigold Inc. - Issaquah
Darigold Inc. - Mt. Vernon
Darigold, Inc.
Darrington Ranger Station
David Evans & Associates
Davidson's Marina Inc.
Davis Pearson, P.C.
Davis, Wright & Tremaine
Dawn Mining Company
Day Island Yacht Harbor Services
Dayton & Knight Limited
Deer Harbor Boatworks
Deer Lake Property Owners
Del Mar Community Service
Del Mar Community Service Inc.
Del Monte Corp.
Delta Marine Industries, Inc.
Dental Association
Department of Agriculture
Department of Community Development
Department of Corrections
Department of Ecology
Department of Environmental Conservation
Department of Fish & Wildlife
Department of Fish and Wildlife
Department of Health
Department of Health / Drinking Water
Department of Natural Resources
Department of Parks & Recreation
Department of The Army
Department of Transportation
Dependable Disposal Company
Dept. of Comm. Dev./Utilities Div.
Dept. of Community Trade & Econ. Dev.
Dept. of Community Trade & Economic Dev.
Dept. of Community, Trade & Economic Dev
Dept. of Waste Water Mgmt., City of Spokane
Derry's Resort
Diamond Lake Improvement Association
Diamond Lake Water & Sewer District
Dickey Farms Inc.
Dickson's Co. - Waller Rd Pit
Dishman Hills Natural Area Assn
Dist 3, Department of Transportation
Divsion of Water Resources, Rhode Island DEM
DNR-WTD
Douglas County Board of Commissioners
Douglas County Public Works
Douglas County PUD No. 1
Douglas County PUD No. 1 (STP)
Douglas County Sewer District #1
Douglas County Trans & Land Service
Douglas Fruit Company
Dovex Fruit Company
Draper Valley Farms Inc.
Ducks Unlimited
Ducks Unlimited - Rancho Cordova
Dunbar Marine Services
Dungeness Water User Assn.
Duwamish Shipyard, Inc.
Duwamish Tribal Council
EA Engineering, Science & Tech.
Eagle Harbor Boatyard Inc.
Eakin Fruit Company
Earth Save of Seattle
Earth Tech
East Columbia Basin Irrigation District
East Lake Washington Audubon
East Wenatchee, Trout Unlimited
Eastern Klickitat Conservation District
Eastern Washington University
Eastlake Community Council
Eastsound Sewer & Water District
Echo Bay Minerals
Echo Glen Children's Center
Echo Glen Children's Center Library
Eco Chem, Inc.
ECO Resource Group
EcoChem Inc.
Eco-Chem Inc.
ECOVA Corporation
Edmonds Office, Landau Associates
EFS Inc.
EHS, Weyerhaeuser Company
DEISenhower,Carlson,Newlands,Reha,Henriot
EKA Chemicals
EKC/GWAC
El Ranchito Inc.
Elbe Water District (STP)
Electronic Specialty
Ellensburg Cement Products
Ellensburg Daily Record
Ellensburg Office, Trout Association
Ellensburg Office, Twin City Foods Inc.
Ellensburg, Public Utility District #1
Eloika Lake Community Association
Elwha S'Klallam Tribe
Emerald Lake Property Owners Association
Energy & Enviromental, Oregon Steel Mills
Energy Facility Site Evaluation Council
Energy Northwest
Engineering Department, Port of Seattle
Engineering Field Activity Northwest
Engineering, Department of Natural Resources
ENSR Consulting & Engineering
Enterprise-Paradise Pt Neighborhood Assn
Entiat Irrigation District
Entranco Engineers, Inc.
ENTRIX INC.
Environmental Affairs Dept., Boise Cascade
Environmental Analysis & Modeling
Environmental Compliance Dept., ARCO
ENVIRONMENTAL CTR RESOURCE LIB
Environmental Fund of Washington
Environmental Information Center
Environmental Protection Agency
Environmental Resource Management, Inc.
Envirovision
EPA
EPA - Region X
EPA - Toxic Substances
EPE Inc.
Equilon Enterprises LLC
Equinox Resources Inc.
ERDA Env. Services
Esvelt Environmental Engineering
Evans Fruit Company, Inc.
Everett Bayside Marine
Everett Office, Kimberly-Clark Corporation
Everett Sewer District
EVS Consultants, Inc.
Exponent Environmental Services
Exterior Wood Inc.
Exxon Nuclear Company
Fairhaven Chiropractice Clinic
Fairview Marine Inc.
Fanning, Stan, Dowelanco
Farman Pickle Co
Farmers Home Administration
Farwestern Farms Inc.
Federal Way Water & Sewer District
Federal Way, Weyerhaeuser Company
Ferguson Brothers
Ferndale Office, Tosco Refining Co.
Ferry Brothers
Ferry Conservation District
Ferry County Assessor
Ferry County Noxious Weed Control Bd.

Ferry County Planning Department
Fiberweb Washougal, Inc.
Filtration Treatment Systems Ltd.
First Washington Net Factory
Fisher Properties, Inc.
Fisherman's Bay Sewer District
Fishman Environmental Services
Fleet Marine Inc.
FlDEISchmann's Yeast Inc.
Floating Homes Association, Inc.
Florence Packing Company
Florida Dept. of Natural Resources
Flying "A" Yacht Service, Inc.
Forsgren Associates
Fort Lewis - Utility Division
Fort Vancouver Plywood
Foss Shipyard
Fossum Orchards
Foster Creek Conservation District
Foster Wheeler Env. Corp.
Four Creeks Community Assoc.
FPS
Franklin Conservation District
Franklin County Board of Commissioners
Franklin County Cooperative Extension
Franklin County Noxious Weed Contr. Bd.
Franklin County Planning Department
Fred Hill Materials Inc.
Fremont Chamber of Commerce
Fresh water Biology
Friday Harbor Sand & Gravel
Friday Harbor Water Dept.
Friends of Brooklyn
Friends of Lake Kathleen (FOLK)
Friends of Lake Whatcom
Friends of Mineral Lake
Friends of Northshore
Friends of Penn Cove
Friends of Rappahannock
Friends of Silver Lake
Friends of the Columbia Gorge
Friends of the Earth
Friends of the Forest
Friends of the Law
Friends of the San Juans
Friends of the Snohomish Delta
G & G Meats
G N Plywood - Mt. Baker Plywood
G. L. Williams & Assocs. Ltd.
Galbreath Packing Co.
Gallery Marine
Gamma Metals Div Alpha
Gardena Farms Irrigation Dist. No. 13
Gardner Consultants
Garfield County Cooperative Extension
Garfield County Engineer
Garfield County Health Department
Garfield County Noxious Weed Control Bd.
Garfield County Planning Department
Garry Struthers Associates
Gary Merlino Construction Co.
Gemmer Association
General Chemical Corp. - Tacoma
General Chemical Corporation
Geography, Central Washington University
George F. Joseph Orchard
Georgia Office, ITT Rayonier Corporation
Georgia Pacific Corp.
Georgia-Pacific Corporation
Gerald D. Williams
Gibbs and Olson, Inc.
Gifford Pinchot National Forest
Gig Harbor Boat Yard Inc.
Gilbert Orchards
Glacier Northwest Inc.
Gleed Station, Northwestern Fruit & Produce
Gleed Station, Price Cold Storage & Packing
Gobar Rearing Pond
Gold Digger Apples, Plant 1
Golden Alaska Seafoods
Golden State Foods
Goldendale Aluminium Company
Goodwin Lake Community Club
Gordon, Thomas, Honeywell et al
Gorge Energy Co.
Graham & James LLP/Riddell Williams P.S.
Granco Inc.
Granger Irrigation District
Grant County Cooperative Extension
Grant County Health District
Grant County Mosquito Control Dist. #1
Grant County Noxious Weed Control Bd.
Grant County Planning Department
Grant County PUD #2
Grant County Weed District No. 1
Grant County Weed District No. 3
Grants Yakima Brewing & Malting Co.
Grape Growers Association
Graphic Packaging Corp.
Gray & Osborne, Inc.
Gray & Osborne, Inc. - Seattle
Grays Harbor Co. Board of Commissioners
Grays Harbor Co. Noxious Weed Contr. Bd.
Grays Harbor Conservation District
Grays Harbor County Commissioners
Grays Harbor County Noxious Weed Control
Grays Harbor County Planning Div.
Grays Harbor County Utilities
Grays Harbor Dept. of Public Works
Grays Harbor Historial Seaport
Grays Harbor Human Services Dept.
Great Western Malting
Greater Wenatchee Irrigation District
Green Giant Company
Green River Community Club
Green River Community College
Green River Rearing Ponds
Greenpeace DC
Griffin Bay Preservation Committee
Group Photographers Assoc.
GTS Duratek Inc.
Gulf Canada Resources
Gulf Coast Institute
H & H Orchards Packing
Haas Fruit Co Inc.
Hall of Justice, Cowlitz County Law Library
Haller Lake Conservation Association
Halls Lake Community & Env. Assoc.
Hama Hama Company
Hampshire Research Institute
Hanford Oversight Committee
Hansen Fruit & Cold Storage
Harbor Marine Maintenance & Supply
Harry's Radiator Shop Inc.
Hart Brewing, Inc.
Hart Crowser Inc. / Seattle Office
Harvard & Associates
Harvest States Cooperatives
Harza Northwest
Hawleys Hilton Harbor Marina
HCH Marine Servicenter
HCW-L, Inc.
HDR Engineering Inc.
Health Risk Assoc. Inc.
Hearn Irrigation District
Hecla Mining Co.
HECLA Mining Company
Helensdale Reclamation District
Heller, Ehrman, White & McAuliffe
Henry Lommers Mint Distillery
Hereaus Shin-Etsu - America
Herndon Ranches
Herrera Environmental
Herrera Environmental Consultants
Hewlett-Packard Company
Hi Country Foods Corp.
Hicks, Pattison, Long Lakes Improv. Assn
Hickson
High Tide Seafoods
Highland Fruit Growers, Inc.
Highland Irrigation District
Hillis Clark Martin & Peterson
Holt & Robison Fruit Co Inc.
Home Builders Association of Washington
Hood Canal Coordinating Council
Hood Canal Environmental Council
Hood Canal Marina Corporation
Hop Growers of America Inc
Hop Growers of Washington
Hops Extract Corp.
Hoquiam Plywood Company
Horseshoe Lake Association
House Energy and Utilities Committee
House of Representatives - Olympia
Houston Office, Shell Oil Company
Howard Moe Enterprises
Hudson River Foundation
Hudson's Bay High School
Huibregtse, Louman, Assoc. Inc.
Hull & Miller Mint Distillery
Hutchinson Irrigation District
Hydro West Group
Hydroelectric Authority, Grand Coulee Project
Hydrometrics, Inc.
Hylebos Marina Inc.
I. P. Callison & Son
IBP Corporation
Icicle Irrigation District
Icicle Seafoods, Inc.
Idaho Dept. of Env. Quality
Idaho Dept. of Environmental Quality
Idaho Office, Bureau of Reclamation
Idaho Office, Eucon Corp.
Idaho Water Resources Division
Ideal Basic Industries
IFA Nurseries Inc.
Illinois Office, Burlington Environmental
Ilwaco Boat Hoist
Imperial West Chemical Co.
Independent Business Association
Independent Food Processors Co.
Independent Warehouse Inc.
Indian Ridge Corrections Ctr.
Indian Summer Golf Ponds
Inland Empire Golf Course
Inland Empire Paper Co.
Inland Empire Paper Company
Inland Empire Public Land Council
Inland Fruit & Produce Co.
Interagency Committee for Outdoor Rec.
Intercounty Weed District No. 51
Intercounty Weed District No. 52
International Research & Evaluation
Interox America
Isenhart Irrigation District
Island County Beachwatchers
Island County Commissioner
Island County Cooperative Extension
Island County Dept. of Community Dev.
Island County Health Department
Island County Noxious Weed Control Bd.
Island County Road Department
Island Lake
Island Spring Inc.
Islands Marine Center
Islands' Sounder
Issaquah Alps Trails Club
Izaak Walton League of America
J & R Outdoor
J J Smith
J. H. Baxter Wood Preserving
J. L. Stordahl & Sons Inc.
J. M. Martinac Shipbuilding
J. M. McConkey & Co. Inc.
J. M. Montgomery Engineers
J. Makowski Associates, Inc.
J. Michael & Associates
J. R. Simplot - Food Div.
J. R. Simplot Company
J. W. Morrissette & Assoc. Inc. P.S.
Jack Frost Fruit Co.
James Oil Co.
James River Corporation
Jamestown S'Klallam Tribe
Japan Airlines
Jefferson County Conservation District
Jefferson County Health Department
Jefferson County Planning
Jefferson County Public Works Dept.
Jensen Motor Boat Company
Jessie's Ilwaco Fish Co. Inc.
Johannessen & Associates, P.S.
John I. Haas Inc.
Johnny Appleseed of Washington
Johns Prairie Association
Johnson Fruit & Cold Storage
Johnson Matthey Inc.
Jones & Stokes
Jones and Stokes
Jones Orchards

Jorgensen Forge Corp
Journal American
JRM Highline Storage
Justesen Industries
K. B. Alloys
K-2 Ski Company
Kaiser Aluminum & Chemical Corporation
Kalama Chemical
Kalama Chemical, Inc.
Kalispel Business Council
KB Alloys Inc.
KCM
Kean, Miller, et al
Keith Uddenberg Inc.
Keller Bros Fruit & Cold Stg.
Keller Fruit & Cold Storage
Kemper Brewing Company
Kempton Downs Homeowners Association
Ken Wolden Chevron
Kennedy Jenks Consultants
Kennedy/Jenks Consultants - Federal Way
Kennewick Irrigation District
Kennewick Office, Twin City Foods Inc.
Kent Prairie Elementary
Kentucky Nat. Res. & Env. Prot. Cabinet
Kenworth Truck Company
Kenyon Zero Storage Inc.
Kerley AG Products Inc.
Kershaw Fruit & Cold Storage
Ketchum Shores Improvement Club
Kettle Falls, Citizens for a Clean Columbia
Kettle Range Conservation Group
Keyes Fibre
Keyes Fibre Co.
Kibbeys Battery Service
Kikiallus Indian Nation
Kimball Engineering-
King Co. Dept. of Metropolitan Services
King Conservation District
King County
King County Cooperative Extension
King County Dept. of Natural Resources
King County Deputy Hearing Examiner
King County Dev Environmental Svcs
King County Hazardous Waste Mgmt Prog.
King County Noxious Weed Control Board
King County Surface Water Mgmt.
King County Wastewater Treatment Div.
King County Water & Land Resources Div.
Kiona Irrigation District
Kirkland Office, Enviro-Drain, Inc.
Kirkland Office, Parametrix, Inc.
Kitsap Audubon Society
Kitsap Conservation District
Kitsap County Community Development
Kitsap County Cooperative Extension
Kitsap County Prosecuting Attorney
Kitsap County Public Works
Kitsap County Public Works Department
Kitsap Marine Industries
Kitsap Regional Coordinating Council
Kittitas Co. Water Dist. #2
Kittitas County Board of Commissioners
Kittitas County Conservation District
Kittitas County Field & Stream Club
Kittitas County Health Department
Kittitas County Noxious Weed Control Brd
Kittitas County Planning Department
Kittitas County Public Works
Kittitas County Water Dist. #6
Kittitas County Weed District #5
Kittitas Reclamation District
Kittitas-Yakima Resource Cons. & Dev.
Ki-Yak Economic Development Council
Kleinfelder
Klickitat County Cooperative Extension
Klickitat County Noxious Weed Control Bd
Klickitat County Planning Department
Klickitat County PUD
KLW Name Plate
Knotts Orchards
Kongsgaard-Goldman Foundation
K-Ply
KPQ AM-FM - Radio
Kramer, Chin & Mayo, Inc. - Portland
Kramer, Chin and Mayo, Inc.
La Conner Office, Dunlap Towing Company
La Conner Office, Skagit System Cooperative
Lacamas Lake Restoration Program
Lacey Office, U.S. Fish & Wildlife Service
LaConner Maritime Services
LaGrande Powerhouse
Lake Alice
Lake Boren Community Association
Lake Burien Shore Club
Lake Chelan Reclamation District
Lake Crabapple
Lake Desire Community Club
Lake Killarney Lake Improvement
Lake Limerick Country Club
Lake Limerick Water
Lake Lucinda Community Lake Committee
Lake Marcel Community Club
Lake Martha Eco Patrol
Lake Meridan Association
Lake Minterwood Beach Club
Lake Osoyoos Association
Lake Restoration Committee Assoc.
Lake Roesiger Community & Boat Club Inc.
Lake Steilacoom Improvement Club
Lake Stevens Clean Lake Association
Lake Stevens Sewer District
Lake Union Dry Dock
Lake Whatcom Watershed Defense Coalition
Lakehaven Utility District
Lakemoor Community Association
Lakemoor Community Club, Inc.
Lamb-Weston, Inc.
Lampaert Meats Inc.
Landa Water Cleaning Systems
Landau Associates/Tacoma Office
Lane County Health & Human Services
Lane Environmental
Lane Powell Spears Lubersky
Larson Fruit Company
Layndye Bennett Blumstein LLP
Layton & Sell, Inc.
L-Bar Products Inc.
Le Clercq Marine Construction
League of Women Voters of Spokane
League of Women Voters of Washington
Leclerq Marine Construction
Legal Department, J. R. Simplot Co.
Lemargie & Whitaker
Lenroc Company
Leslie Brands Food Services
Lewis County Conservation District
Lewis County Cooperative Extension
Lewis County Noxious Weed Control Bd.
Lewis County Public Services
Lewis County Public Services, Planning
Lewis County Water District #2
Library, Kramer, Chin & Mayo, Inc. - Portland
Lieb Marine Industries
Light Division, Tacoma Public Utilities
Lilyblad Petroleum
Lincoln County Building/Planning Comm
Lincoln County Conservation District
Lincoln County Health Dept.
Lincoln County Noxious Weed Control
Liquid Carbonic Corp.
Liquid Sugars Inc.
Little Pend Oreille Lake Association
Lloyd Garretson Co.
Local 5, Assoc. Western Pulp & Paper Workers
Lone Star Northwest
Long Lake LMD Steering Committee
Longview Diking District
Longview Fibre Co.
Longview Fibre Company
Longview Office, Reynolds Metals Co.
Longview Office, Weyerhaueser
Loon Lake Property Owners Assoc.
Loon Lake Sewer District #4
Lost (Devil's) Lake
Louchard Yacht Restoration
Louis Berger & Associates, Inc.
Louisville & Jefferson County
Lovric's Sea Craft
Lower Columbia Basin Audubon Society
Lower Columbia River Estuary Program
Lower Elwha S'Klallam Tribe
Lower Squilchuck Irrigation District
Lower Stemilt Irrigation District
Ludlow Water Company
Lummi Indian Tribe
Lynnwood Center
Madison Metro Sewer District
Magi Inc.
Mail Stop 81, METRO
Makah Tribal Center
Makah Tribal Council
Makah Tribe
Manson Growers Co-Op
Maple Lane School
Marco Pollution Control
Marco Shipyard
Marietta Band of Nooksack Tribe
Marine Industries Northwest
Marine Resource Consultants
Marine Science Center
Maritime Commerce Center
MARKHAM STAR RT BOX 195
Marten & Brown LLP
Martha Lake (Warm Beach)
Maryland Department of Environment
Maryland Dept. of Natural Resources
Marysville Utilities
Mason Conservation District
Mason County
Mason County Board of Commissioners
Mason County Health Department
Matson Fruit Company
Maul, Foster & Alongi, Inc.
Mayr Lumber Division
Maytown Lake
McAlder Elementary School
McCain Foods Western
McCalder Elementary School
McDougall & Sons Inc.
McFarland Cascade
Mead Office, Kaiser Aluminum
Menan Starct Div of W Polmer
Mercer Marine Inc.
Mercer Ranch
Meridian Senior High School
Merwin Trout Hatchery - PP&L
Metaline Falls Office, Resource Finance Inc.
Methow Valley Citizen's Council
Methow Valley Irrigation District
Methow-Okanogan Reclamation District
METRO
METRO - Westpoint STP
METRO Environmental Labs
METRO Environmental Planning
Miccosukee Tribe
Michigan Dept. of Natural Resources
Microbiology, Water Management Laboratories
Midway Meats Co.
Midway Sewer District
Miller & Miller Boatyard
Miller & Nash Attorneys
Miller Brothers Farms
Miller Creek STP
Miller, Nash, Wiener, Hager & Carlsen
Millerdale Irrigation District
Milne Fruit Products
Mineral Lake Resort
Ministry of the Environment & Energy
Minnesota Pollution Control Agency
Minterbrook Oyster Company
Mirror Lake Resident's Assoc.
Mission Lake
Moab Irrigation District #20
Mobil Oil Corp Plant #46-123
Model Irrigation District #18
Modutech Marine Inc.
Monroe Cold Inc.
Monson Fruit Company
Monson Ranches

Morton International Inc.
Moses Lake Conservation District
Moses Lake Industries
Mossyrock Trout Hatchery
Mount Baker/Snoqualmie National Forest
Mount Rainier National Park
Mount Rainier Park Assoc.
Mount Vernon Wastewater Plant
Mountaineers
Mountlake Terrace Office, U.S. Forest Service
MS CAPNR, City of Redmond
Muckleshoot Indian Tribe
Multi Chem
Municipal Research and Service Center
Munn Lake
Mystic Lake Dairy
NACD
Naches Office, U.S. Forest Service
Naches-Selah Irrigation District
Nalco Chemical Co. - Vancouver
Naselle Youth Camp Library
NATCO
National Audubon Society
National Food Corp.
National Frozen Foods Corp.
National Marine Fisheries Service
National Wildlife Federation
Natural Res. Conservation Serv. - Area 4
Natural Resource Conservation Service
Natural Resource Management Program
Natural Resources Conservation Service
Natural Resources Council of America
Nature Conservancy
Nautical Landing
NCASI
Nelson Crab Inc.
Nestle Brands Food Service
New Day Fisheries Inc.
New West Fisheries, Inc.
New West Gypsum (U.S.A.), Inc.
Newman Lake Property Owner's Association
Nickell Orchards
Nisqually Delta Association
Nisqually Indian Tribe
Nisqually Reach Nature Center
Nisqually Trout Farm #2
Nisqually Valley News
Nisqually Wildlife Refuge
NMFS Portland Office
NOAA - Library & Information Services
Nob Hill Water Association
NODC, NOAA
Nooksack Salmon Enhancement Association
Nooksack Tribe
Nordlund Boat Company Inc.
North Audubon Society
North Carolina Dept. of Env. Health
North Cascades Audubon Society
North Cascades National Park
North Central Outlook/University Herald
North Dalles Irrigation District
North Island Boat Company
North Spokane Irrigation District #8
North Yakima Conservation Dist.
North Yakima Conservation District
Northeast Tri-County Health District
Northern Fruit Company
Northern Marine Industries
Northern Resource Consulting
Northlake Maritime Center
Northwest Alloys, Inc.
Northwest Environmental Advocates
Northwest EnviroService, Inc.
Northwest Farm Food Co-Op
Northwest Fisheries Association
Northwest Fly Anglers
Northwest Food Processors Association
Northwest Indian Fisheries Commission
Northwest Marine Trade Association
Northwest Outdoor Center
Northwest Packing Company
Northwest Pulp and Paper Association
Northwest Women Flyfishers
Northwest Yacht Repair, Inc.
Novation Inc.
NRCS / Puyallup
NRCS / Spokane
NSRC
Nuclear Waste Program, Department of Ecology
NW Small Cities Services
NWFPA
Occidental Chemical Corporation
Ocean Alexander Marine Center
Ocean Beauty Chinook
Ocean Shores Fresh Waterways, Inc.
Ocean Spray Cranberries
Ocean Spray Cranberries, Inc.
Ocean Star Seafoods
Oeser Company
Office of Financial Management
Office of Water, U.S. EPA - DC Office
Offut Lake
Ogden, Murphy Wallace
Ohop Lake Improvement Club
Okanogan and Wenatchee National Forests
Okanogan Conservation District
Okanogan County Board of Commissioners
Okanogan County Cooperative Extension
Okanogan County Health Department
Okanogan County Noxious Weed Control Bd.
Okanogan County Office of Plng. & Dev.
Okanogan County Public Utilities Dist.
Okanogan Dept. of Public Works
Okanogan Irrigation Dist.
Okanogan National Forest
Okanogan Wilderness League
Old Main 415 B
OLYMPIA FEDERAL SAVINGS BLDG
Olympia Office, AEQUUS Corporation
Olympia Office, Georgia Pacific
Olympia office, People for Puget Sound
Olympia Office, Weyerhaeuser Paper Co.
Olympia Parks & Recreation Department
Olympia Public Works
Olympia, Intermountain Grass Growers
Olympia, Washington State Parks & Recreation
Olympian PreCast Inc.
Olympic Coast National Marine Sancturary
Olympic College Extension
Olympic Environmental Council
Olympic Laundry & Dry Cleaners, Inc.
Olympic Memorial Hospital
Olympic National Fish Company
Olympic National Park
Olympic National Park / Forks
Olympic Peninsula Audubon Society
Olympic Region, Department of Transportation
Olympus Terrace Sewer District
Operations W236, Liquid Sugars Inc.
Orcas Environmental Education Project
Orcas Village Sewer District
Orchard Avenue Irrigation District #6
Oregon Department of Env. Quality
Oregon Dept. of Environmental Quality
Oro Fruit Company
Oroville-Tonasket Irrigation District
Othello Conservation District
Outlook Irrigation District
Outreach Unit, U.S. EPA Region X
Owen S & E Library
Oyster Growers Assoc., Willapa-Grays Harbor
P&R Edmondson Fruit
Pabco Roofing Products
Pabst Brewing Company
PACCAR, Inc.
Pacific Coast Coal
Pacific Coast Feather Company
Pacific Coast Federation of Fishermen
Pacific Coast Fishermans Wives Coalition
Pacific Coast Oyster Growers Assoc.
Pacific Concrete Industries
Pacific Conservation District
Pacific County Community Dev., Plng.
Pacific County Health Department
Pacific County Noxious Weed Control Bd.
Pacific County Regional Planning
Pacific International Engineering
Pacific Lumber & Shipping Company
Pacific Metal Finishing
Pacific Northwest Baking Co.
Pacific Northwest Research Station
Pacific Power and Light
Pacific Rim Environmental Inc.
Pacific Rim Real Estate Group
Pacific States Marine Fisheries Comm.
Pacific Street, City of Bellingham
Pacific West Extruded Plastic
Pacific Wood Treating Corporation
PacifiCorp
Padden Creek Marine Inc.
Padilla Bay Reserve, Department of Ecology
Paine Field Bldg. #C-19
Pakonen & Son
Palmer Coking Coal Company
Palouse Conservation District
Palouse-Rock Lake Conservation District
Panther Lake Association
Paragon, Inc.
Parks & Recreation Commission
Parks & Recreation Commission /Resources
Parks & Recreation, City of Kennewick
Parks Department, City of Redmond
Pasadena Park Irrigation District #17
Pasco, Washington Hay Growers Association
Pateros Office, Department of Fish & Wildlife
Paul A. Bouchey Ranches Inc.
Paxton Sales Corp.
Pe Ell Office, Trout Unlimited
Pend Oreille Conservation District
Pend Oreille County Noxious Weed Cntr.
Pend Oreille County Planning Department
Pendleton Woolen Mills
Peninsula Daily News
Penn Cove Park Sewer District
Pentec Environmental
People for Puget Sound
Pepsi Cola Bottling Co.
Perkins Coie
Perkins Coie Attorneys
Peshastin Fruit Growers
Peshastin Hi-Up Growers
Peshastin Irrigation District
Pfizer Specialty Minerals
Pfizer Specialty Minerals Inc.
Ph.D., Community Psychologist
Phantom Lake Homeowner Association
Philip Environmental
Phillips Lake Association
Phillips Lake Community Assoc.
Photo Dynamics
Pierce College
Pierce County Conservation District
Pierce County FSA Office
Pierce County Government Relations
Pierce County Noxious Weed Control Board
Pierce County Planning & Land Services
Pierce County Public Works
Pierce County Utilities Dept.
Pillsbury Company
Pine Creek Conservation District
Pine Lake Community Club
Pine Lake Protection Assn.
Pine Tree Division, Naumes Inc.
PIPE, Inc.
Pirtle, Morisset, Mason Law Firm
Planning & Comm. Dev., City of Everett
Planning Department, City of Bremerton
Planning Department, City of Roslyn
Planning Department, Ferry County
Planning Dept., City of Everett
Planning Division, City of Renton

Plum Creek
Plum Creek Timber
Plum Creek Timber Co. - Columbia Falls
Poe Asphalt Paving
Poggie Club of Washington
Point Adams Packing Co.
Point No Point Treaty Council
Polaris Applied Sciences Inc.
Pomeroy Conservation District
Ponderay Newsprint Co.
Pope & Talbot Inc.
Port Gamble Klallam Tribe
Port Ludlow Office, Pope Resources
Port of Anacortes
Port of Clarkston
Port of Coupeville
Port of Edmonds
Port of Everett
Port of Friday Harbor
Port of Grays Harbor
Port of Ilwaco
Port of Indianola
Port of Longview
Port of Peninsula
Port of Port Angeles
Port of Port Townsend
Port of Portland
Port of Poulsbo
Port of Shelton
Port of Skagit County
Port of Sunnyside
Port of Tacoma
Port of Whitman County
Port of Willapa Harbor
Port Orchard Marine Railway
Port Townsend Boat Works
Port Townsend Citizen
Port Townsend City Council
Port Townsend Paper Corp.
Port Townsend Paper Corporation
Port Townsend Shipwrights
Port Townsend, City Parks Department
Portland Office, Bureau of Indian Affairs
Portland Office, CH2M Hill
Portland Office, David Evans & Associates
Portland Office, USFS
Potlatch Corporation
Precision Aerospace & Company
Precision Air Motive Corp.
Prentice Packing & Storage Co.
Preston Gates & Ellis
Preston Premium Wines
Pretreatment Coordination, City of Yakima
Pride Packing Company
Priest Lake District, USDA Forest Service
PRO - Salmon
Property Rights Alliance
Protan Laboratories
Ptarmigans
Public Utilities, City of Longview
Public Works & Utilities, City of Bremerton
Public Works Department, City of Enumclaw
Public Works Department, City of Everett
Public Works Department, City of Lynnwood
Public Works Department, City of Spokane
Public Works MV Division, City of Everett
Public Works Yard, City of Puyallup
Public Works, City of Bainbridge Island
Public Works, City of Federal Way
Public Works, City of Hoquiam
Public Works, City of Kalama
Public Works, City of Puyallup
Public Works, City of Quincy
Public Works, City of Selah
Public Works, City of Shelton
Public Works, City of Sunnyside
Public Works, City of Tukwila
Public Works, Clallam County Courthouse
Puget Power
Puget Sound Energy
Puget Sound Keeper/Alliance
Puget Sound Plywood
Puget Sound Regional Council
Puget Sound Water Quality Action Team
Puget Soundkeeper Alliance
Putnam Environmental Services
Puyallup Tribal Council
Puyallup Tribe
Puyallup Tribe - Fisheries Division
Pyramid Orchards
Quail Run Vintners
Qualex
Qualex Inc.
Queen City Plating Inc.
Quick Wash
Quil Ceda Tanning
Quilcene Office, U.S. Forest Service
Quileute Tribe
Quinault Indian Nation
Quincy Columbia Basin Irrigation Dist.
Quincy Office, Lamb-Weston Inc.
Quincy-Columbia Basin Irrigation Dist.
R. D. Frank Farms
R. E. Redman & Sons
R. F. Taplett Fruit Company
R2 Resource Consultants Inc.
RABANCO
Radiation Protection, Department of Health
Rainbow Coalition
Rainier Audubon Society
Rainier Petroleum
Rainier State School
Ravnik & Associates
Realty Division, USFWS
Recomp of Washington Inc.
Redmond Office, Golder Associates Inc.
Redmond Office, SECOR International Inc.
Reed Brothers Shipyard
Regal Fruit Cooperative
Region 2, Department of Fish & Wildlife
Region 3, Department of Fish & Wildlife
Reichhold Chemicals Inc.
Reid, Middleton Engineering
Rensel Associates
Renton Office, Soil Conservation Service
Research Office, Department of Transportation
Resource Planning Associates
Resources
REV Red Man & Sons
Reynolds Metals Co.
Richard K. Miller & Associates, Inc.
Richmond Office, Reynolds Metals
Rigby, Jones, Zuanich
Ritzville, WSU Cooperative Extension
Rivera & Green Inc.
Rivers Council of Washington
Roche Fruit Company
Rocket Research Company
Rogers Engineering
Rosa Irrigation District
Rosario Resort
Rosewater Engineering, Inc.
Roth Hill Engineering Partners, Inc.
Rowe Farms Inc.
Roy F. Weston, Inc.
Roza Irrigation District
Ruehl & Arstein Inc.
S & B Marine Company
Sacheen Sewer District
Sacramento Office, EMCON
Sacramento, Department of Public Works
Safeway Juice Plant
SAIC / Bothell Office
Sakuma Brothers Farms Inc.
Salmon Bay Sand & Gravel Company
Salmon For All
Salt Lake City Office, Pacificorp
Samish Tribe of Indians
Sammamish Watershed Festival
San Francisco, U.S. EPA
San Juan County
San Juan County Conservation District
San Juan County Health District
San Juan County Planning Department
San Juan County SWAC
San Juan Islands Audubon
San Juan Preservation Trust
San Ramon Office, Chevron USA, Inc.
Sandvik Special Metals
Sandy Hook Yacht Club
Sanger Marine
Sauk-Suiattle Indian Tribe
Save Lake Sammamish
Save Long Lake Association
Save Union Bay Assn.
Sawyer Plant, Snokist Growers
Scatter Creek Rest Area - DOT
Schaake Packing Company Inc.
Schenk Packing Co.
School of Law
School of Law, Ocean & Coastal Law Center
Science Enrichment
Scott Lake Management Co.
SCS Engineers
SDS Lumber Company
SE 110 OYSTER BEACH RD
Sea Farm Washington Inc.
Sea K Fish Co., Inc.
SEA Program, Department of Ecology
Seatac Airport
Seattle Aquarium
Seattle Audubon Society
Seattle Branch, Trout Unlimited
Seattle Central Community College
Seattle City Attorney's Office
Seattle City Light
Seattle City Light (Diablo)
Seattle District, Corps of Engineers
Seattle Drainage & Wastewater Utility
Seattle Engineering Department
Seattle Office, Army Corps of Engineers
Seattle Office, Black & Veatch
Seattle Office, Ecology & Environment, Inc.
Seattle Office, Foster, Pepper & Shefelman
Seattle Office, Kenworth Truck Company
Seattle Office, Perkins Coie LLP
Seattle Office, Shell Oil Company
Seattle Post Intelligencer
Seattle Public Library
Seattle Public Utilities
Seattle Steam Corp.
Seattle Tilth Association
Seattle Times
Seattle Water Department
Seaview Boatyard Inc - Shilshole
Seawest Yacht Brokers, Inc.
SEH America, Inc.
Selah & Moxee Irrigation District
Selkirk School Dist. #70
Semiahmoo Marina
Senate Agriculture & Environment Comm
Senate Ecology & Parks Committee
Sequim Office, Battelle Marine Sciences Lab
Shakertown Corporation
Shannon & Wilson Engineers
Shannon Point Seafoods
Shapiro and Associates
Shearer Orchards Inc.
Shellfish Lab, WDF (Shellfish Program)
Shellfish Program, Department of Health
Shelter Bay Community
Shelton Yacht Club
Shoalwater Bay Indian Tribe
Shockey & Associates
Shonan (USA) Inc.
Shorewood Elementary
Shorewood Estates (STP)
Shorewood High School
Shoshone-Bannock Tribes
Siemans Power Corp.
Sierra Club Legal Defense Club
Sierra Club Northwest/Alaska Office
Silver Valley Laboratories
Simon Fraser University
Simpson Tacoma Kraft Company
Skagit Audubon Society
Skagit Conservation District
Skagit County Cooperative Extension
Skagit County Dept. of Emergency Mgmt.
Skagit County Health Department
Skagit County Noxious Weed Control Bd.
Skagit County Planning
Skagit County Planning Department
Skagit County Public Utility District #1
Skagit County Public Works
Skagit Mfg. Co.
Skagit Plant - Sedro Woolley
Skamania County Cooperative Extension
Skamania County Noxious Weed Control Bd.
Skamania County Plg & Comm Dev
Skokomish Fisheries Office
Skokomish Indian Tribe
Skone & Connors Produce Inc.
Skookum Bay Oyster Company
Skykomish Office, USDA Forest Service
Skykomish Ranger District
Smith & Lowney PLLC
Smith & Nelson Inc.
Smith Chrome Plating
Smith, Alling, & Lane

Smithco Meats Inc.
Smokey Point Concrete, Inc.
Snake Lake Nature Center
Snipes Mountain Irrigation District
Snohomish Conservation District
Snohomish County
Snohomish County Community Development
Snohomish County Dept of Plng & Dev
Snohomish County Noxious Weed Cntr. Bd.
Snohomish County Parks
Snohomish County Public Works
Snohomish County S.W. Division
Snohomish Health District
Snohomish Office, Pilchuck Audubon Society
Snohomish Tribe of Indians
Snohomish Wetlands Alliance
Snohomish, Everett & Monroe Tribes
Snokist Growers
Snoqualmie Pass Sewer District
Snoqualmie Sand and Gravel
Snoqualmie Tribal Council
Snoqualmoo Tribe of Indians
Soil Conservation Service - Dayton
Solectron Corporation
Solid Waste Services, Department of Ecology
Solvay Interox
Sonoco Products Co.
Sonoco Products Company
Sound Color
Sound Ecological Services
Sound Refining, Inc.
Soundcare Inc.
South Bend Boat Shop
South Bend Office, East Point Seafood Co.
South Carolina Department of Health
South Columbia Basin Irrig. Dist.
South Columbia Basin Irrig. District
South Douglas Conservation District
South King County Regional Water Assoc.
South Park Marina
South Puget Sound Community College
South Sound Kelp Krawlers Dive Club
South Tacoma Hatchery
South Yakima Conservation District
Southwest Suburban Sewer District
Southwest Washington Anglers
Southwest Washington Farm Bureau
Southwest Washington Health District
Spanaway Lake High School
Specialty Plating Company, Inc.
Spectra Labs
SPEECH
Spokane Area Chamber of Commerce
Spokane County Conservation District
Spokane County Div of Planning
Spokane County Health District 6
Spokane County Noxious Weed Ctrl Board
Spokane County Public Works
Spokane League of Women Voters
Spokane Mountaineers, Inc.
Spokane Office, Department of Health
Spokane Tribe
SPPR, Department of Ecology
Squaxin Island Tribe
SSMC4, NORM2, NOAA - Sanctuaries & Reserves
ST Services
Stadelman Comini Holdings
Stadelman Fruit (Zillah)
Stalzer & Associates
Stanwood Office, Twin City Foods Inc.
Star Lake Community Club
State Parks & Recreation Commission
Stateside Associates
Stealheaders Association
Steel Lake Resident's Association
Steelhammer Salmon Farm
Steilacoom Indian Tribe
Stella (STP)
Stemilt Growers C A
Stemilt Irrigation District
Stevens County Conservation District
Stevens County Noxious Weed Control Bd.
Stevens County Planning & Community Dev.
Stevens County Weed Board
Stevens Pass Sewer District
Stifel Engineering
Stillaguamish Tribe
Stoel, Rives, Boley, Jones & Grey
Stokes Lawrence P.C.
Stone Consolidated Corporation
Stoneway Concrete - Cedar Shores
Stoneway Rock & Recycling
Stormwater Management, City of Tacoma
Strand Apples
Strategic Planning Commission
Streamkeepers Port Angeles
Sturdy Engineering Corp.
Sudden Valley Comm. Assoc.
Sugarman Packing & Storage
Suldan's Boat Works, Inc.
Summit Lake Community Club
Sumner Office, Exide Corporation
Sumner Office, Parametrix, Inc.
Sun King Fruit Co.
Sunday Lake Community Club
Sundquist Fruit & Cold Storage
Sunland Water District
Sunnfjord Boats, Inc.
Sunnyside Irrigation District
Sunnyside Valley Irrigation District
Sunnyside, Darigold Farms, Inc.
Sunquest Air Specialties
Sunwood Lakes Homeowners Assoc., Inc.
Super Surface Tecna
Superior Oil
Superior Packing Co. Inc.
Suquamish Indian Tribe
Surfside Inn Co.
Surfside Inn Condo #1
Susan Lake
SVR Design Company
Swift Hydroelec #2 - PP&L
Swinomish Tribe
Sylvia Lake Country Club, Inc.
Symon's Frozen Foods
T & C Photo Lab
Tacoma Department of Public Utilities
Tacoma Environmental Sciences
Tacoma News Tribune
Tacoma Office, League of Women Voters
Tacoma Office, Overall Laundry Service
Tacoma Office, Puget Sound Energy PSE
Tacoma Office, Williams, Kastner & Gibbs
Tacoma Pierce County Chamber of Commerce
Tacoma Public Library
Tacoma Public Utilities
Tacoma-Pierce County Health Department
Tahoma Audubon Society
Talasaea Consultants
Tamoshan - WWTP
Tapps Island Assn.
Taylor Bay Beach Club
Taylor Environmental & Marine Services
Taylor United Inc.
Tebo Brothers Rock Products
Tempo Lake Water Association
Tenaska Inc.
Terra Firma Inc.
Texaco Refining & Marketing, Inc.
Texaco U.S.A.
The Apple House
The Canal Boatyard Inc.
The Columbian Publishing Co.
The Cow Palace
The Fisheries Dept., Muckleshoot Tribe
The Heritage School
The Hogue Cellars
The JD White Co.
The Mountaineers - Seattle
The Mountaineers Conservation Division
The Olympic Hot Tub Co.
The Seattle Aquarium
The Wilderness Society
Thermafiber, LLC
Thomas, Dean & Hoskin Eng.
Thomas, Whittington, Anderson, et al
Thorn Environmental
Thurston Conservation District
Thurston County Development Services
Thurston County Health
Thurston County Health Department
Thurston County Noxious Weed Cntr. Bd.
Thurston County Regional Plng. Council
Thurston County Solid Waste
Thurston Regional Planning Council
Tiderunner Inc
Tiger Lake Community Council
Tilbury Cement Company
Tillicum Marina
Tim Corliss & Son Co. (Plant 4)
Time Oil Company
TNRCC
Todd Pacific Shipyard Corp.
Toledo Sand & Gravel
Toppenish Office, Bureau of Indian Affairs
Toppenish Office, Del Monte
Tosoro Northwest Company
Totem Marine Service
Touchet Valley Irrigation District #16
Town of Albion
Town of Almira
Town of Beaux Arts Village
Town of Bucoda
Town of Carbonado
Town of Cathlamet
Town of Clyde Hill
Town of Colton
Town of Conconully
Town of Concrete
Town of Coulee City
Town of Coulee Dam
Town of Coupeville
Town of Creston
Town of Cusick
Town of Darrington
Town of Eatonville
Town of Electric City
Town of Elmer City
Town of Endicott
Town of Fairfield
Town of Farmington
Town of Friday Harbor
Town of Garfield
Town of Granger
Town of Hamilton
Town of Harrah
Town of Hartline
Town of Hatton
Town of Hunts Point
Town of Index
Town of Ione
Town of Krupp
Town of La Conner
Town of La Crosse
Town of Lamont
Town of Latah
Town of Lind
Town of Lyman
Town of Malden
Town of Mansfield
Town of Marcus
Town of Mattawa
Town of Metaline
Town of Metaline Falls
Town of Millwood
Town of Naches
Town of Nespelem
Town of Northport
Town of Oakesdale
Town of Odessa
Town of Pe Ell
Town of Rainier
Town of Reardan
Town of Riverside
Town of Rockford
Town of Rosalia
Town of Ruston
Town of Skykomish
Town of South Cle Elum
Town of South Prairie
Town of Springdale
Town of St. John
Town of Starbuck
Town of Steilacoom
Town of Tieton
Town of Twisp
Town of Uniontown
Town of Washtucna
Town of Waterville
Town of Waverly
Town of Wilbur
Town of Wilkeson
Town of Wilson Creek
Town of Winthrop
Town of Yacolt
Town of Yarrow Point
Toxics Cleanup Program, Department of Ecology
Toyota Motor Manufacturing, U.S.A., Inc.
Trail End Lake
Tramco
Tree Top, Inc.
Trentwood Irrigation District #3
Trepanier Engineering
Triangle Association
Trident Seafoods Corp. - South
Tri-Star Marine, Inc.
Tri-State Steelheaders

Trout Inc.
Trout Lake Community Council
Trout Springs
Trout Unlimited
Trout Unlimited - Elliott Bay Chapter
Trout Unlimited - Olympia
Trout Unlimited Washington Office
Trout, Inc.
Troutlodge, Inc.
Truck Town Inc.
Trust for Public Land
Tubafor Mill Inc.
Tucannon Fish Hatchery
Tukwila Public Works Department
Tulalip Fisheries
Tulalip Tribes
Tulalip Tribes of Washington
Tulalip Tribes Water Quality Lab
Tumwater Office, Dart Container Corporation
Tumwater Office, Resource Management, Inc.
Tumwater Sales Terminal, Texaco USA
Twin City Foods
Twin City Foods Inc.
Two Rivers Irrigation District #19
U.S. Air Force/San Francisco
U.S. Army Corps of Engineers
U.S. Army, Fort Lewis - I Corps
U.S. Department of Fish & Wildlife
U.S. Department of Interior
U.S. Department of Interior / Denver
U.S. Dept. of Interior
U.S. EPA Region VI
U.S. EPA Region X
U.S. EPA, Department of Ecology
U.S. Fish & Wildlife Service
U.S. Food & Drug Administration
U.S. Forest Service
U.S. Geological Survey, WRD
U.S. Marine/Bayliner Marine
U.S. Oil & Refining Company
U.S. Soil Conservation Service
U.S.D.A. Forest Service
Umatilla National Forest, USDA Forest Service
Underwood Conservation District
Underwood Fruit & Warehouse
Union Carbide Corporation
Union Chapter, Trout Unlimited
Union Gap Irrigation District
Union Gap Office, Eakin Fruit Company
University of Idaho
University of Oregon
University of Washington
University of Washington - Hospital
University Place Park & Rec
Unocal / Tacoma
Unocal Agricultural Products
Unocal Corp. - Edmonds
Upper Grant Conservation District
Upper Skagit Tribal Council
Urban Planning, Eastern Washington University
Urban Wildlife Coalition
URS Greiner
URS Greiner Woodward Clyde
US Dept. of Housng & Urban Dev.
US Fish & Wildlife Svs
US Ink
USDA Forest Service
USDA Natural Resources Conservation Serv
USDA NRCS/Wenatchee
USDA Soil Conservation Services
USFS
USFS - Vancouver Office
USFW Enhancement
USGS/Pacific NW District
UW - Washington Sea Grant Program
Valicoff Fruit Company
Valley Fruit
Valley Processing Inc.
Van de Graaf Ranches Inc.
VANALCO
Vancouver Audubon Society
Vancouver Door Company
Vancouver Ice & Fuel Oil
Vancouver Office, Airco Industrial Gases
Vancouver Office, Chempro
Vancouver Office, Siemens Solar Industries
Vancouver, USDA Forest Service
Vashon Library
Vashon Sewer District
Vera Irrigation District
Vern's Moses Lake Meat Co.
Vic Franck's Boat Company, Inc.
Vlahovich Boat Corporation
Voelker Fruit & Cold Storage
Vorys, Sater & Seymore
W & H Pacific - Bothell
WA Environmental Council
WA Office of Environmental Education
WA State Conservation Commission
WA Wildlife & Recreation Coalition
Wahkiakum Co. Noxious Weed Control Brd.
Wahkiakum Conservation District
Wahkiakum County Noxious Weed Cntrl Brd.
Wahkiakum County Planning Commission
Waitts Lake Property Assoc.
Waitts Lake Property Owners Assn.
Walla Walla Co. Noxious Weed Control Bd
Walla Walla County Conservation District
Walla Walla County Cooperative Extension
Walla Walla County Noxious Weed Cntrl Bd
Walla Walla County Reg Plng Dept
Walla Walla County-City Health Dept.
Walnut Creek Office, Eastman Kodak
WALPA / Long Lake Association
Walt's Wholesale Meats
Ward Lake Holiday Hills Assn.
Warden Conservation District
Warm Beach Campground
Warnell School of Forest Resources
Warren Plant, Washington Fruit & Produce
Wash. Public Power Supply System
Washington Aggregate & Concrete Assoc.
Washington Assn. of Wheat Growers
Washington Association of Counties
Washington Beef (Toppenish)
Washington Beef Inc.
Washington Cattlemen's Association
Washington Conference of SDA
Washington Correction Center
Washington Crab Producers, Inc.
Washington Dept. of Agriculture
Washington Environment Council
Washington Environmental Council
Washington Environmental Political
Washington Fish Growers Assn.
Washington Forest Protection Assn.
Washington Friends of Farms & Forests
Washington Frontier Juice
Washington Hills Cellars
Washington Kayak Club
Washington Native Plant Society
Washington Office of Environmental Ed.
Washington Public Ports Association
Washington Public Power Supply System
Washington Public Utility Dist. Assoc.
Washington Rhubarb Growers Assoc.
Washington Sea Grant
Washington State Conservation Comm.
Washington State Dairy Federation
Washington State Dental Assn.
Washington State Drycleaners Assoc.
Washington State Farm Bureau
Washington State Grange - Olympia
Washington State Lake Protection Assn.
Washington State Lakes Protection Assn.
Washington State Noxious Weed Control Bd
Washington State Parks & Rec. Commission
Washington State Representative
Washington State Representative Dist 10
Washington State Representative Dist 15
Washington State Representative Dist 22
Washington State Representative Dist 38
Washington State Representative Dist 40
Washington State Representative Dist 44
Washington State Senator
Washington State Senator Dist 07
Washington State Senator Dist 10
Washington State Senator Dist 11
Washington State Senator Dist 14
Washington State Senator Dist 15
Washington State Senator Dist 21
Washington State Senator Dist 22
Washington State Senator Dist 36
Washington State Senator Dist 49
Washington State University
Washington State University - Longbeach
Washington State Water Resources Assn.
Washington Toxics Coalition
Washington Toxics Coalition News
Washington Trollers Assoc.
Washington Trout
Washington Water Power
Washington Water Power Company
Washington Wilderness Coalition
Washington Wildlife Foundation
Washington Wildlife Study Council
Waste Action Project
Wastewater Division, City of Chehalis
Wastewater Lab
Wastewater Treatment Plant
Wastewater Treatment Plant, City of Edmonds
Water & Air Research, Inc.
Water Code Administration Yakima Region
Water Committee, Lummi Island Community Club
Water Environmental Services
Water Quality & Resource Management
Water Quality Program, Department of Ecology
Water Resources Control Board
Water Resources Planning, Muckleshoot Tribe
Water Resources Prog, Department of Ecology
Water Resources Program, City of Olympia
Water Resources, Chehalis Indian Tribe
Water Resources, City of Lacey
Water Resources, Nez Perce Tribe
Water Supply/Waste, Department of Health
Water tech
Water Treatment Plant, City of Pasco
Water Utility, City of Centralia
Watercraft International Inc.
Watershed Information Center
Welch Foods Inc.
Welch's (Grandview)
Weldcraft Steel & Marine, Inc.
Well Drillers Association
Wells & Wade Fruit Company
Wenas Irrigation District
Wenatchee Reclamation District
Wenatchee Valley Fly Fishers
Wenatchee Valley Vintners
Wenatchee White Wtr/Scenic River
Wesbrook Marine
West Coast Environmental Law Assn.
West Coast Regional Center, NCASI
West District Office, Olympic National Park
West Farm Foods
West Sound Marina, Inc.
Westech Co.
Western Regulatory Digest
Western States Hazardous Waste Project

Western States Petroleum Assoc.
Western Washington University
Western Wood Preservers Institute
Western Wood Preserving Co.
Westman Marine Inc.
Weyerhaeuser
Weyerhaeuser - Raymond
Weyerhaeuser - Snoqualmie
Weyerhaeuser Co.
Weyerhaeuser Co. (Pe Ell)
Weyerhaeuser Company
Weyerhaeuser Company - Cosmopolis
Weyerhaeuser Company - WTC 1A5
Weyerhaeuser Realty Co.
WH Pacific
Whatcom Co. Planning & Development Svcs
Whatcom Conservation District
Whatcom County
Whatcom County Council
Whatcom County Health Department
Whatcom County Noxious Weed Control Brd.
Whatcom County PUD No. 1
Whatcom County Water District #10
Whatcom Watch
Whidbey Audubon Society
Whidbey Island Conservation District
White Salmon Irrigation District
White Salmon Office, USFS
White Swan Water Project, Yakama Nation
Whitestone Reclamation District
Whitman Conservation District
Whitman County Cooperative Extension
Whitman County Health Department
Whitman County Noxious Weed Control Bd.
Whitman County Planning Department
Whittier Office, Eastman Kodak
Wiegardt Brothers Inc.
Wilcox Farms, Inc.
Wild Olympic Salmon
Wilderness Society
Wildlife Heritage Foundation
Willapa Hills Audubon Society
Willapa Oyster Growers Assoc.
Willapa Valley Water District
Willapa Whistler
Willapa-Grays Harbor
Willis Brothers Lockers Inc.
Wilson Engineering LLC
Wiltermood Associates
Windy Point Packing Company, Inc.
Wisconsin Coastal Management Program
Wiser Lake Improvement Association
Witte Orchards Inc.
Wolf Hollow Wildlife Rehabilitation Ctr.
Wollochet Harbor Sewer District
Woodinville High School
Woodward-Clyde Consultants
WQ Oregon DEQ
WSPA
WSU Extension Faculty, Water Quality
WSU Library, Environmental Information Center
WWSA
Yachtfish Marine
Yakama Nation
Yakama Nation Confederated Tribes
Yakima Audubon Society
Yakima Co Diking & Drainage Dist #48
Yakima County
Yakima County Board of Commissioners
Yakima County Cooperative Extension
Yakima County Health District
Yakima County Planning Department
Yakima County Public Works
Yakima Fruit & Cold Storage
Yakima Gourmet Cheese Co
Yakima Greenway Foundation
Yakima Office, AMOCO Foam Products
Yakima Office, Bureau of Reclamation
Yakima Office, CH2M Hill Northwest
Yakima Office, Delmonte Foods
Yakima Office, Department of Agriculture
Yakima Office, N. C. Machinery
Yakima Valley Audubon Society
Yakima Valley Conference of Govt's
Yakima Wastewater Plant
Yakima-Tieton Irrigation District
Zirkle Fruit Company
Zittels Marina Inc.

Appendices

Technical Reports and Other Documents

The following documents produced by the Department of Ecology are available. These detailed documents address the proposed changes to the water quality standards.

- *Evaluating Standards for Protecting Aquatic Life in Washington's Surface Water Quality Standards – Temperature Criteria – Draft Discussion Paper and Literature Summary* (Department of Ecology publication number 00-10-070)
- *Evaluating Standards for Protecting Aquatic Life in Washington's Surface Water Quality Standards – Dissolved Oxygen – Draft Discussion Paper and Literature Summary* (Department of Ecology publication number 00-10-071)
- *Setting Standards for the Bacteriological Quality of Washington's Surface Water – Draft Discussion Paper and Literature Summary* (Department of Ecology publication number 00-10-072)
- *Water Quality Antidegradation Implementation Plan – Draft Discussion Paper* (Department of Ecology publication number 00-10-069).
- Department of Ecology's draft discussion document *Review of USEPA's 1999 Ammonia Criteria for Fresh waters*
- *Establishing Surface Water Quality Criteria for the Protection of Agricultural Water Supplies – Draft Discussion Paper* (Department of Ecology publication number 00-10-073)

- Chapter 173-201A WAC 173-201A – Water Quality Standards for Surface Waters of the State of Washington

- *Ambient Water Quality for Bacteria – 1986*. U.S. EPA, Office of Water Regulations and Standards, Criteria and Standards Division, Washington, D.C. 20460. EPA 440/5-84-002. January 1986.

Glossary and List of Acronyms

ºC	Degrees Celsius
303(d)	Ecology's list of impaired waters that violate the water quality standards.
APA	Administrative Procedures Act
BMP	Best Management Practices
CFR	Code of Federal Regulations
Char	Bull trout and Dolly Varden
CRITFIC	Columbia River Inter-Tribal Fish Commission
CWA	Clean Water Act
DEIS	Draft Environmental Impact Statement
Ecology	Washington State Department of Ecology
DEIS	Environmental Impact Statement
EPA	United States Environmental Protection Agency
ESA	Endangered Species Act
FERC	Federal Energy Regulatory Commission
NMFS	National Marine Fisheries Service (NOAA Fish)
NPDES	National Pollutant Discharge Elimination System Permitting Program
mg/L	Milligrams per liter
PBT	Persistent Bioaccumulative Toxins
RCW	Revised Code of Washington
Salmonids	Salmon, Steelhead, Trout, and Char
SEPA	State Environmental Policy Act
TMDL	Total Maximum Daily Load, or Water Clean-Up Plan
UAA	Use Attainability Analysis
uS/cm	Microsiemens per centimeter
USFWS	United States Fish and Wildlife Service
WAC	Washington Administrative Code (The Water Quality Standards for Surface Waters of the State of Washington are in WAC 173-201A)
WFPA	Washington Forest Protection Association

Responses to Comments Received During the Scoping Period and Comment Letters

The public comment for scoping of the DEIS was held from July 16 to August 16. Ecology received ten comments. Numerous comments did not directly relate to the DEIS. A copy of the scoping comment letters Ecology received along with a copy of the response to those comments are included in this section. These comments helped to form the content of this DEIS.

Ecology received comments from the following organizations:

- Chelan Public Utility District
- Columbia River Inter-Tribal Fish Commission (CRITFIC)
- Environmental Organizations:
  American Rivers, Citizens for a Healthy Bay, Columbia Riverkeeper, Kettle Range Conservation Group, Northwest Environmental Advocates, People for Puget Sound, Washington Environmental Council, Washington Public Interest Research Group, Washington Toxics Coalition, and Washington Trout
- Everett, City of
- Heller Ehrman
- Seattle, City of
- Skagit County Cattlemen Association
- University Place, City of
- Washington Forest Protection Association (WFPA)
- Weyerhaeuser

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November 26, 2002

Mr. Steven Hays
Fish & Wildlife Consultant Chelan PUD
P.O. Box 1231
Wenatchee, WA 98807

Dear Mr. Hays:

Once again, thank you for your scoping comments. We received a variety of scoping comments that ranged from specific comments on the proposal, economic comments to be addressed in our draft Administrative Procedures Act (APA) materials and scoping comments for the draft Environmental Impact Statement (EIS).

Most of your comments relate to indirect environmental and economic impacts. We have focused the draft EIS on the direct environmental impacts. Since the standards provide the foundation for permits and listing impaired water bodies, we have tried to identify in the draft APA material where changes to the criteria will affect those activities. We think that the preferred proposal walks the line between the socio-economic impacts and stetting standards that meet the goal of this rule-writing effort. The issues you addressed in your letter, and the Ecology approach to these issues, are summarized below.

The EIS should consider any differences between alternatives that would affect the issuance or timing of issuance of FERC licenses.

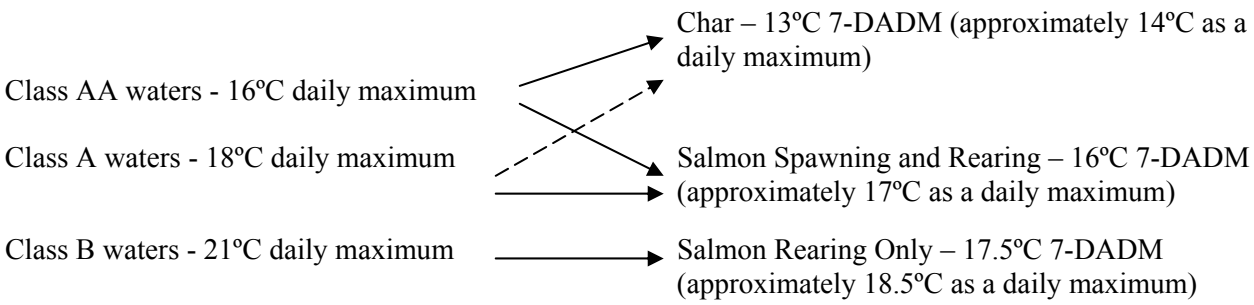
We have included a specific section in the draft EIS that discusses compliance language for dams. The intent was to include information that would allow Ecology to work with dam operators to implement water quality improvements. If this proposal is included in the final rule, and the standards cannot be met after an effort is made to achieve water quality standards, dams can pursue site-specific standards or a Use Attainability Analysis (UAA) through the formal process. .

Potential Socio-Economic Affects Specific to Topics Identified by WDOE and Use-Based Standards

- **Temperature Criteria**

The natural conditions clause included in the standards can be used to address situations where the natural waterbody condition is less optimal than expressed by the criteria. Waterbodies with special conditions such as the Columbia 20'C will retain these special conditions. The draft APA material does discuss the fact that these changes will be more stringent for some water bodies. This will affect the number of listed water bodies needing TMDLS. It is not the intent of this rule-making to create more process, we do however, recognize that the development of biologically based criteria for the whole state will create some situations where we will need to determine the appropriate criteria for individual waterbodies that are naturally warmer than the criteria. This attached chart shows how waterbodies, depending on their current class will be affected.

Summary of Transition to Proposed Temperature Criteria



- **Dissolved Oxygen**

The proposed criteria have an allowance for human impacts. The difficulty and impacts of not meeting the standards is addressed in the draft APA material. If natural conditions do not allow for criteria to be met, the natural conditions clause makes it clear that natural conditions would become the criteria for that location if there are no human actions on the waterbody.

- **Use-Based Standards**

Information on the impacts of reformatting the standards or staying with the current class system is in the draft EIS as well as the draft APA material. The natural conditions clause in the standards should help to address the issue of salmonid use of non-optimal habitat.

- **Additional Alternatives**

As we looked at the issues associated with setting single criteria to apply across Washington, we tried to develop ways to handle variability. We hoped that the regional temperature project would have some ideas or solutions. We are interested in how to set criteria that make sense and meet the goals of the Clean Water Act and Washington's Water Pollution Control Act. Under the Clean Water Act, showing a use does not exist or setting site specific criteria requires more formality and formal rule adoption. The standards contain a number of tools that can be used to address natural conditions or uses. These will be organized for the first time in a special "tools" section in the draft rule.

- **FERC and 401 Certification**

The draft EIS and the draft APA material discuss alternatives associated with developing compliance schedules. In addition, the draft EIS includes information on making allowance for irreversible human structures.

Thank you for your comments. We realize that this rule development process has been significant and agree with your concern– that we should "reduce the level of public resources into increased process activities". We hope to do this by finalizing this rule effort so that we can move forward with implementation and achieving on the ground improvements. I do recognize there are concerns and anxiety over the changes in the rule. In addition to the draft EIS and the draft APA material, please review and comment on our draft implementation plan, which lays out how we intend to implement the rules. I hope that it will also address some of the concerns you have raised in your letter.

Sincerely,

Melissa Gildersleeve, Manager
Watershed Management Section

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November 26, 200

Mr. Robert Heinith
Hydro Program Coordinator
Columbia River Inter-Tribal Fish Commission
729 NE Oregon St., Suite 200
Portland Oregon 97232

Dear Mr. Heinith:

Once again, thank you for your scoping comments. We received a variety of scoping comments that ranged from specific comments on the proposal, economic comments to be addressed in our draft Administrative Procedures Act (APA) materials, and scoping comments for the draft Environmental Impact Statement (EIS).

In looking at your comments, they all appear to be specifically related to our proposal and it will be important to submit them on the actual proposal once it is out for formal public comment.

Since you have participated with us in EPA's Regional Temperature process, you know that we, along with the other agencies, have been trying to determine the appropriate standards to protect aquatic species. The draft EIS will have three alternatives that will reflect our current proposal, a no action proposal and a lower environmental impact alternative, which for temperature will look like the draft December 2001 version of the proposed rule.

The draft EIS and draft rule package will also have a section on how to manage 401 certification and dam relicensing and it will be important to get your comments on that part of the package. The package will also include an analysis of changing the format of the rules. Any future recommendations to remove beneficial uses will be required to go through formal rule making and need to be approved by the Environmental Protection Agency and the federal fish agencies.

This summer, the agency sent a letter to all tribes in Washington saying that we would like to formally consult with them once this rule is out for public comment. We also made the offer to meet with them to explain our proposal. We were invited to brief the Environmental Policy Committee for the Northwest Indian Fisheries Commission and based on that briefing, they submitted comments. Please let me know, (360)407-6461, if you would like to set up a similar briefing with members of your organization.

Thank you for your comments and as I mentioned in the beginning, it will be important to get your specific comments on the proposal when we formally release this information for public comment. In addition to the draft EIS and the draft APA material, please review and comment on our draft implementation plan, which lays out how we intend to implement the rules.

Sincerely,

Melissa Gildersleeve, Manager
Watershed Management Section

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December 6, 2002

Mr. Robert J. Masonis, Director
Northwest Regional Office
American Rivers
150 Nickerson Street, Suite 311
Seattle, WA 98109

Dear Mr. Masonis:

Once again thank you for your scoping comments. We received a variety of scoping comments that ranged from specific comments on the proposal, economic comments to be addressed in our draft Administrative Procedures Act (APA) materials and scoping comments for the draft Environmental Impact Statement (EIS).

In an effort to help understand the items that are being changed in the Water Quality Standards, we separated out the major issues and have prepared alternatives for those issues. We determined that the draft December 2001 rule was the reasonable feasible environmentally conservative option according to Chapter 197-11-440(5) (b). Included is a chart we developed to track the individual changes you requested in your alternative. Many of the issues are outside the scope of this current rule revision effort.

Purpose and Need

The goal statement for this rule effort will focus on the requirements under the Clean Water Act and state requirements identified in Washington's Water Pollution Control Act (RCW 90.48) and Washington's Water Resources Act of 1971 (RCW 90.54). Ecology, under delegated authority by EPA, is required to review standards every three years and to update them as appropriate. This update is focused on the following:

- Moving from the current class-based system to a use-based system for designating beneficial uses of waters (for example swimming and aquatic life habitat) in Washington.
- Making changes to criteria (for example temperature and bacteria) for designated uses of the waters.
- Providing more clarity and detail on implementing the regulation, including the state's antidegradation policy.
- Organizing the structure and sections of the regulation to make it easier to use.

Alternatives Analysis

In looking at the comments in your letter, it appears as though they are specific comments on our proposal. We have put together a very focused draft EIS that discusses the significant areas of the rule change. It will be important to look at the draft rule language and make comments when the whole rule package is out for formal public comment.

- **Temperature Criteria**

Based on feedback that we received from the Northwest Indian Fisheries Commission Environmental Policy Committee, we decided to use the temperature criteria that were in the December 2001 draft version of the rule as the more reasonable and feasible alternative with a lower environmental impact.

- **Dissolved Oxygen**

The lower environmental impact alternative includes a one-day minimum and a 90-day average. The technology and the natural variability used to monitor dissolved oxygen makes using a 7-DADM difficult.

- **Mixing Zones**

Mixing zones are not included in the scope of this rule revision process.

- **Antidegredation Implementation Plan**

The lower environmental impact alternative for Tier II waters is one that would require all new or expanded activities to undergo an alternatives analysis. This appears to be similar to what you are proposing.

The lower environmental impact alternative in the draft EIS for Tier III waters will be to have the current language remain and then add a category that would capture waterbodies that are between Tier II and Tier III. This new category will have fewer eligibility requirements and will still need to be identified in a rule.

Thank you for your comments. It will be important to get specific comments on the proposal when we formally release this information for public comment. In addition to the draft EIS and the draft APA material, please review and comment on our draft implementation plan, which lays out how we intend to implement the rules. I hope that it will also address some of the concerns you have raised in this letter.

Sincerely,

Melissa Gildersleeve, Manager
Watershed Management Section

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November 26, 2002
Mr. Tom Thetford, P.E.
Utilities Director City of Everett
3200 Cedar Street
Everett, WA 98201

Dear Mr. Thetford:

This letter is a more detailed response to your July 29, 2002 comments to Ecology on the scope of the Draft Environmental Impact Statement (EIS) for modifying the existing Surface Water Quality Standards. You made several constructive and specific comments, and I wanted to make sure you were informed about how Ecology will, or has already, used those comments. The specific comments I'll address are summarized below, along with Ecology's approach to the issue.

The EIS needs to address changing to a use-based system in marine waters (not just in fresh waters). In doing so, uses that are incorrectly designated should be changed.

This rule-making only addresses the change to a use-based format in freshwaters. The proposal to restructure the standards was planned to accompany a more detailed look at existing uses, for example, the uses of agricultural water supply and salmonid habitat. That more detailed look at uses has been addressed for freshwaters during the last eight-ten years of this rule-making process. Marine waters have not been part of the restructuring scope. At this late date, Ecology could not introduce a large change to the proposal, such as including marine waters in the restructuring, without significantly changing the scope of the project. Although addressing marine waters in a use-based format is a project that we agree should happen, Ecology must stay within the established scope for the current rule revision effort.

The second part of your comment deals with removal of uses. Uses cannot be removed unless a Use Attainability Analysis (UAA) has been conducted, has been approved by Ecology, and the proposed use removal has gone through a public process to revise the Water Quality Standards. The action then needs EPA approval before it can be finalized. Use removal is beyond the scope of this rule-making. However, Ecology plans to develop and finalize guidance on UAAs after the rule-making is completed. Ecology will develop this guidance as part of a public process.

The existing antidegradation language in standards is optimal for implementing antidegradation in Washington, and should he considered in the EIS. The current standards contain many portions that address antidegradation (e.g., mixing zones), and the EIS needs to acknowledge this. If EPA understood how antidegradation was implemented in already-existing portions of the standards it would not be pushing the state to be more explicit in its implementation language.

The No Action alternative evaluated in the DEIS is to stay with the existing language in the standards, as you suggest. We agree that the standards contain many sections regarding implementation, but many parts of the federal requirements remain undefined. For instance, specific steps that must be taken when addressing Tier I through III waters are not defined in the existing standards, and language specifying how these waters are addressed might lead to better water quality and more predictive permitting practices.

The existing standards already give protection equivalent to outstanding resource waters. These protections are listed as Special Conditions, and prohibit waste discharges in specific water bodies. These protections were put in place because the need for them was identified. The EIS should address whether special protections should continue to be based on need, or whether this criteria should be expanded to include waters where need is not demonstrated. If need is not demonstrated, then this protection becomes a political decision, and any added protections should be conferred by the legislature.

The standards contain special conditions prohibiting discharges for some waterbodies, and the restrictions are in place based on an assessment of need. However, whether these prohibitions are equivalent to Outstanding Resource Water protections is not clear. The DEIS will use the existing standards language as the no action alternative, and will present additional alternatives for designating outstanding resource waters. These alternatives will more clearly spell out alternative criteria that could be used to specifically designate a water as a Tier III outstanding resource water, but do not specify legislative involvement. Ecology cannot require legislative approval for Tier III designation because it would be inappropriate for Ecology to try to assign work or specific responsibilities to the legislature. Ecology is assigned, by the :legislature, the responsibility of administering Clean Water Act programs in Washington, and does this following the requirements of the legislature given in RCW 90-48. The alternatives discussed in the DEIS (apart from the no action alternative) contain specifics on public process requirements that ensure that any designation of Tier III waterbodies would occur with full public participation.

We at Ecology appreciate the efforts you and the city of Everett have put into the development of the proposed rule, including your comments on the DEIS. The breadth and complexity of the proposed rule changes have resulted in a process that has been lengthy and labor intensive to all involved. We look forward to working with you during the upcoming public review period to finalize a rule that will result in better water quality for Washington.

Sincerely,

Melissa Gildersleeve, Manager
Watershed Management Section

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November 26, 2002

Mr. Lincoln C. Loehr
Heller Ehrmann Attorneys
6100 Columbia Center 701 5h Ave.
Seattle, WA 98104-7098

Dear Mr. Loehr:

This letter is a more detailed response to your comments to Ecology, dated July 29, 2002, regarding the scope of the draft Environmental Impact Statement (EIS) for the proposed water quality standards revisions. Your comments concerned the proposed changes to the freshwater ammonia criteria. Your interest in this subject is much appreciated by Ecology staff, as this issue has been largely overshadowed by the more controversial aspects of the revision process (e.g., development of temperature and bacteria criteria). The Ecology responses to your comments are summarized below.

The EIS should contain a discussion of full adoption of the 1999 EPA recommended criteria for freshwater ammonia, as opposed to only for waters without salmonids. The EIS should contain a discussion of EPA's review of the basis of the Ecology recommendation.

Three alternatives will be provided in the DEIS: No Action, Proposed Alternative, and an Alternative with Lower Environmental Impact. These three alternatives are required by the State Environmental Policy Act (SEPA). Although more specific alternatives could be evaluated, Ecology is only presenting these three alternatives for discussion because we want to try to remain, as much as possible, with alternatives the public has seen before. As such, in most cases we are using the December 2001 draft rule language as the Alternative with Lower Environmental Impact. Ammonia is rather unique because, in following this strategy, we have the Proposed Alternative (discussed in the discussion document available at the water quality standards website), which would only apply the EPA criteria to non-salmonid waters, the No Action Alternative, which is the existing criteria and also represent a more protective alternative, and the Alternative with Lower Environmental Impact. In the case of ammonia, the No Action Alternative and the Alternative with Lower Environmental Impact are identical. In following this approach, there is not a place where the alternative you recommend (full adoption of the EPA criteria) can logically be discussed within the DEIS. However, that does not mean that your comments will not be addressed within the larger rule package. Your comment letter and this response will be included in the "Response to Scoping Comments" in the DEIS, and the issues you bring up will also be addressed in the policy memo accompanying the ammonia discussion document.

The comment letter from EPA that you wish to be discussed in the DEIS was one of only a few comments that Ecology received when the preliminary draft discussion paper was distributed in 2001. Ecology used the EPA comment memo, as well as other comments, to revise the draft discussion document. As such, some of the issues you mention have been addressed in the current draft discussion document. However,

the basic approach taken by Ecology remains unchanged. Ecology thinks that the scant data available on the chronic effects of ammonia on early-life-stage salmonids (four published papers), and the wide range in effects levels shown by those data, are insufficient to develop a criterion level that pinpoints a specific species effects level, and that the data in fact leave us with a great deal of uncertainty in estimating a "safe" level for early-life-stage salmonids. The Ecology review of ammonia is focused on salmon, and is consistent with current efforts in this state to provide protection for salmonids. The approach Ecology is taking is not entirely consistent with past development of criteria for toxics, where the EPA approach of averaging toxicity values to develop national criteria values is the typical approach. However, the approach of looking at all available data and trying to come up with a safe level that can reliably provide full protection is consistent with EPA criteria development.

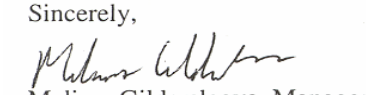
The basic message that we want to convey regarding this proposal is that it is based on a risk management decision that acknowledges the uncertainty presented by the data set for chronic effects of ammonia to early life stages of salmonids. In proposing to apply the EPA chronic criteria only to non-salmonid waters, Ecology is making a decision that is very precautionary. In other words, because of uncertainty, Ecology is proposing to choose a criteria scenario that is most likely to provide protection for salmonids. Ecology is not saying that the EPA national chronic criteria are not sufficiently protective, but simply that the available data do not give us enough information to confirm this. This type of risk management decision is a policy decision driven by the great concern in Washington for protecting salmonids, which have economic, recreational, and spiritual significance for many people in Washington.

Adoption of the EPA recommended criteria should be examined in the SBEIS.

The SBEIS will examine the differences between the proposed alternative and the existing rule. In this case the proposed alternative will relax the stringency of the standards somewhat, but because the chronic criterion is the most restrictive for most permitting situations, and because the existing "salmonids-present" criterion would remain for waters where salmon habitat is a use (most freshwaters), the proposed alternative will not result in a great cost savings. Ecology is aware that the EPA recommended criteria would result in more cost savings to the public, especially in the area of wastewater treatment facility planning and construction. If, during the public comment period, data is submitted that would verify that the EPA recommended criteria would fully protect early life stage salmonids, Ecology would be very pleased to consider that information.

The criteria values that Ecology includes in the final rule are not completely constrained by the choices presented in the DEIS. The DEIS lays out reasonable alternatives, but does not exclude reasonable alternatives that are not examined in the document. Ecology expects that we will receive comments from the public during the public comment period for the draft rule. Those comments will help to shape the content of the final rule. Staff welcome your comments, on both technical and policy issues, and would be glad to meet with you to discuss this further. We look forward to working with you during the upcoming public review period to finalize a rule that will result in better water quality for Washington.

Sincerely,



Melissa Gildersleeve, Manager
Watershed Management Section

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November 26, 2002

Ms. Sally Marquis
Director, Resource Planning
Seattle Public Utilities
710 Second Ave
Seattle, WA 98104

Dear Ms. Marquis

Once again, thank you for your scoping comments. We received a variety of scoping comments that ranged from specific comments on the proposal, economic comments to be addressed in our draft Administrative Procedures Act (APA) materials and scoping comments for the draft Environmental Impact Statement (EIS).

We are including the reformatting of the Water Quality Standards in the draft EIS. One of the key reasons we are transitioning to this new format is to make it easier to fix some of the misclassifications that currently exist. The current "class-based" system for fresh waters contains five classes and groups certain beneficial uses that are assumed to occur in each of those classes. This grouping makes it difficult to tailor requirements for a particular water body when a use is found to not exist there. The change from class-based to use-based will not change designated uses that are already assigned to waters. So we will not be able to immediately correct any current misclassifications of Class AA or Class A. The change in format will give us more flexibility to change assigned uses in the future to reflect what actually exists and is attainable in a specific water body.

Water bodies that are incorrectly designated will have to go through a Use Attainability Analysis (UAA) to show that the use never existed and is not attainable. Federal regulations prohibit states from removing beneficial uses without going through a formal UAA. Any changes will require Ecology to go through formal rule process and obtain approval by the Environmental Protection Agency and the federal fish agencies.

Thank you for your comments. In addition to the draft EIS and the draft APA material, please review and comment on our draft implementation plan, which lays out how we intend to implement the rules.

Sincerely,

Melissa Gildersleeve, Manager
Watershed Management Section

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November 26, 2002

Mr. Norm Mitchell, President
Skagit County Cattlemen
27589 Minkler Rd.
Sedro Wooley, WA 98284

Dear Mr. Mitchell:

This letter is a more detailed response to the comments you sent to Ecology (dated August 12, 2002) regarding the scope of the draft Environmental Impact Statement (EIS) being prepared in support of the .proposed revision to the Water Quality Standards. I appreciate the time and effort you and the Skagit County Cattlemen's Association have put into reviewing the proposed scope. You made several constructive and specific comments, and I wanted to make sure you were informed about how Ecology will, or has already, used those comments. The specific comments I'll address are summarized below, along with Ecology's approach to the issue.

Natural or background conditions and unusual events need to be discussed in more detail in the EIS as a probable significant adverse impact. Specifically, the EIS should contain the following items as probable significant adverse impacts:

- **Identification of natural and background thermal conditions for streams**
- **Data assessments for streams in different geographic locations (eastern vs. western Washington streams)**
- **Using a "one size fits all" standards rather than standards that are specific to geographic regions**
- **Environmental impacts to beneficial uses if water quality standards are inappropriate for streams due to their location.**

Many of the comments from your association (the comments above and many others in your letter) are focused around the concerns of making sure (1) that natural conditions are correctly assessed and (2) that conditions appropriate for one area of the state might not be appropriate for another area of the state. Ecology agrees that both of these points are of concern. The existing standards and the proposed modifications contain language to address natural conditions. The language states the intent of the natural conditions clause, which is that if a natural condition is of poorer quality than a statewide criterion, the natural condition becomes the criterion and the more stringent statewide criterion need not be met. This, as well as the "tools" section of the standards that contains a listing of the regulatory tools available to modify criteria and uses, allows Ecology and interested parties to address location-specific concerns.

The areas you will see addressed in the DEIS are areas of proposed change that will result in significant changes to the standards. These particular issues discussed above will not be addressed in the DEIS because Ecology is not proposing substantial changes in the areas of the rule that deal with these issues

(although a reorganization of the rule language to result in better "readability" has resulted in a specific section of the rule that is devoted entirely to these regulatory tools). Although these issues will not be discussed in the DEIS, Ecology will use both your scoping comments and any additional comments you submit during the public comment period to help evaluate proposed rule language, and how final language is implemented.

Ecology should use appropriate data and ensure that all beneficial uses of the waters are protected.

Agreed. When Ecology addresses waterbodies, whether from a 303(d) listing decision, a TMDL natural conditions determination, or from a future Use Attainability Analysis review, a great deal of effort is given to making sure all data that are available, relevant, and of high quality are used in the assessment **Human error, could lead to an inappropriate standard, which could result in environmental impacts. Dissolved oxygen and bacteria are two examples where the environmental complexity of their sources and variability makes it difficult to assess human impacts.**

Ecology agrees that an overly stringent or too lax criterion could result in negative impacts to the environment. The last ten years of this rule-making process has included detailed reviews of the available, relevant, and high quality science by Ecology, federal and state agencies, public landowners, industry, tribes, and many others. That review has resulted in proposed criteria that Ecology thinks will provide full protection for the use of waterbodies. The issue of natural variability is a key issue with Ecology, and one of the specific issues that we address during the source assessment stage of a TMDL

Poor sampling design could have environmental repercussions. Natural conditions should be ascertained before prescribing corrective conditions. If not, required actions could lead to modifications of natural conditions.

Ecology agrees that poor sampling design could lead to data collection that would provide an incorrect picture of the natural conditions of a waterbody. Prescriptive actions, as in the case of a TMDL requirement, would not be required without a determination of whether the water was actually being impacted, and was not in a natural condition. As stated above, Ecology agrees with your comment that all appropriate data should be used to assess beneficial uses and water conditions. When Ecology collects data to examine the state of natural conditions, or when we review data collected by others, an important part of the assessment is focused on the sample design, and whether the data collected are relevant and of high quality.

The EIS should address how the "science" used in the review was selected. The EIS should provide a definition of science, and the criteria used to select the science used in the review.

Within the discussion documents, the criteria used to accept and use data from scientific studies is discussed. The science used in the evaluation of the standards changes is included in the DEIS by reference to discussion documents.

Ecology should discuss the probable effects of adaptive management techniques if they are applied incorrectly, and without consideration for specific site circumstances. Add a discussion of 'site potential" criteria for specific stream segments, and the possible impacts of inappropriate expectations for site restoration.

Provisions for adaptive management, although resulting from a proposed change in rule language, should not result in adverse environmental effects. The proposed language on adaptive management allows for a trial time to gauge effectiveness of controls, and controls would not be imposed without taking into

account the concerns summarized above. As discussed above, the standards have many tools available to address site conditions, including the natural conditions clause.

I very much appreciate the thoughtful comments you sent in. They highlight many of the concerns that Ecology has been, and will continue to, grapple with as it implements the standards. I look forward to additional comments from your group that will help us focus in on a rule that will result in better water quality for Washington.

Sincerely,

Melissa Gildersleeve, Manager
Watershed Management Section

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November 26, 2002

Ms. Ann Goos
Washington Forest Protection Association
724 Columbia Street, N.W., Suite 250
Olympia, Washington 98501

Dear Ms. Goos:

Once again, thank you for your scoping comments. We received a variety of scoping comments that ranged from specific comments on the proposal, economic comments to be addressed in our draft Administrative Procedures Act (APA) materials, and scoping comments for the draft Environmental Impact Statement (EIS). The issues you addressed in your letter, and the Ecology approach to these issues, are summarized below.

The Purpose and Need Statements should Reflect the goals and Purposes of the Clean Water Act.

The DEIS goal statement for this rule effort will focus on the requirements under the Clean Water Act and requirements identified in Washington's Water Pollution Control Act (RCW 90.48) and Washington's Water Resources Act of 1971 (RCW 90.54). Ecology, under delegated authority by EPA, is required to review standards every three years and to update them as appropriate. This update is focused on the following:

- Moving from the current class-based system to a use-based system for designating beneficial uses of waters (for example swimming and aquatic life habitat) in Washington.
- Making changes to criteria (for example temperature and bacteria) for designated uses of the waters.
- Providing more clarity and detail on implementing the regulation, including the state's antidegradation policy.
- Organizing the structure and sections of the regulation to make it easier to use.

The Legal and Regulatory Framework Associated with the Water Quality Standards Should be Included in the DEIS.

The draft EIS includes the Water Quality Program's legal framework. In an attempt to keep the draft EIS short and focused on just the Water Quality Standards, we have not included a discussion of other authorities, related laws, and programs that are working to improve water and habitat across the state. Your letter does a great job of listing out all the work that is being done across the state to address these issues.

The Range of Alternatives Must Reflect the Purpose of the Water Quality Standards

In addition to laying out alternatives that meet the Clean Water Act I 0 1 (1) (a) and 3 03 (c) (2), we will also lay out options that meet Washington's statutory requirements mentioned above.

The Range of Options Must Protect Existing uses and Depend Upon the Best Available Science

We think that our proposed alternative does protect existing beneficial uses and is based on the best available science. As part of our rule package, we will include discussion documents that highlight the available science and how we used the science. In addition, our participation in the Environmental Protection Agency's (EPA) regional temperature project has given us an opportunity to debate this science. Throughout this process we have tried to put forward options that we think are scientifically based so that we can articulate our position to EPA and the federal fish agencies when this rule goes through Endangered Species Act consultation. Our proposal is different from the current draft of the Regional Temperature Guidance so it will be important for us to be able to explain our rationale on why we may have a different recommendation.

The Range of Alternatives Must Reflect Combinations of Numeric and Narrative Criteria Based on Quantifiable, Objective, Repeatable Methods and Not Optimize for a Single Use

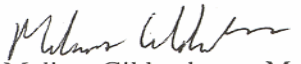
We have three options in the EIS that include the first two that you have suggested. We do not have a third alternative that relies on narrative criteria. In an attempt to maintain focus and move towards narrowing the options in this rule, we will rely on the draft December 2001 proposed rule when possible to provide the environmental alternative with the lowest impact. The points you raise about the complexity of setting numeric temperature criteria for the whole state, which is geographically diverse, are good points and is one reason why this has been such a difficult rule development process.

Environmental Issues of Significance

We have built into the draft EIS and the draft APA your issues I and 5. As I have stated earlier, this draft EIS has been narrowed to specifically focus on the Water Quality Standards. You make a good point that there is a lot going on to address water quality and habitat in Washington. We have not looked at all those activities in this EIS but they are important implementation activities that will be critical for us to meet the goals of Washington's Water Pollution Control Act and the federal Clean Water Act.

Thank you for your comments. They will be helpful to us with this effort and I think to others as they look at all the work taking place in Washington maintain clean water. In addition to the draft EIS and the draft APA material, please review and comment on our draft implementation plan, which lays out how we intend to implement the rules. I hope that it will also address some of the concerns you have raised in your letter.

Sincerely,



Melissa Gildersleeve, Manager
Watershed Management Section

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY
P.O. Box 47600 • Olympia, Washington 98504-7600
(360) 407-6000 • TDD Only (Hearing Impaired) (360) 407-6006

November 26, 2002

Mr. Ken Johnson
Weyerhaeuser
PO Box 9777
Federal Way, WA 98063-2345

Dear Mr. Johnson,

Once again thank you for your scoping comments. Your letter contained several specific suggestions for alternatives to be addressed in the draft Environmental Impact Statement (DEIS), as well as an endorsement of the comments from WFPA. Your comments and the approach Ecology is taking in the DEIS are summarized below:

Ecology should explain what the relationship is (if any) between the EIS for the impending revision of the water quality standards and the requirements of RCW 34.05.328.

The requirements of RCW 34.05.328 are specifically addressed in APA materials accompanying the release of the draft rule language and DEIS. The DEIS is not intended to fulfill requirements of the APA, but instead is a response to requirements of the State Environmental Policy Act (SEPA).

The EIS should comprehensively and clearly discuss natural conditions and how the natural conditions clause is implemented.

The language related to natural conditions will not be discussed in the DEIS because substantial changes in this area are not proposed. The existing standards and the proposed modifications contain similar language to address natural conditions. The language clearly states the intent of the natural conditions clause, which is that if a natural condition is of poorer quality than a statewide criterion and there are no human impacts, the natural condition becomes the criterion and the more stringent statewide criterion need not be met. This, as well as the "tools" section of the standards, that contains a listing of the regulatory tools available to modify criteria and uses, allows Ecology and interested parties to address location-specific concerns. We share your concern that the intent of the natural conditions clause should be clearly stated.

Provide a science-based explanation of the reasons why specific concentrations of certain indicator bacteria serve as conservative indicators of the presence of disease causing pathogens. The EIS should explore the idea of developing site-specific criteria for bacteria.

The DEIS does address the use of specific indicator bacteria and what they mean for public health protection. The DEIS does not explore the idea of site-specific criteria development for bacteria, but this issue could be addressed using the tools mentioned above.

The EIS should address the establishment of a specific waterbody class to address constructed storm water conveyance and treatment systems.

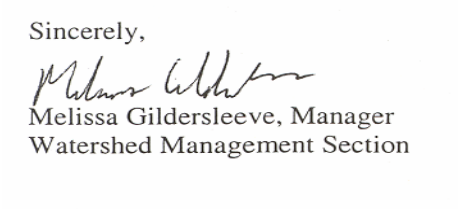
The proposed alternative for this rule-making is to restructure the standards to a "use-based" format. If this is successful, the class-based system will only exist for marine waters. Storm water conveyance and treatment systems may be addressed through the "tools" section of the standards, as discussed above. In addition, the draft rule will contain specific language addressing waters managed for the removal of pollution.

The EIS should examine the effects of remaining with the current antidegradation language. An alternative to this would be to maintain the language but develop implementation guidance outside the rule. Ecology should analyze the costs associated with the preferred alternative.

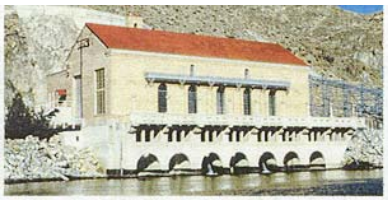
The No Action alternative in the DEIS will be to stay with the existing language. If this language is kept, better implementation guidance will be a requirement. The DEIS only examines the environmental impacts of the rule change, but the accompanying APA document will address cost issues.

Thank you for your comments. They will be helpful to us with this effort and I think to others as they look at all the work taking place in Washington maintain clean water.

Sincerely,



Melissa Gildersleeve, Manager
Watershed Management Section


PUBLIC UTILITY DISTRICT NO. 1 *of* CHELAN COUNTY

P.O. Box 1231, Wenatchee, WA 98807-1231 • 327 N. Wenatchee Ave., Wenatchee, WA 98801
(509) 663-8121 • Toll free 1-888-663-8121 • www.chelanpud.org

August 16, 2002

Ms. Melissa Gildersleeve
Section Manager - Water Quality Program
WASHINGTON STATE DEPARTMENT OF ECOLOGY
Post Office Box 47600
Olympia, WA 98504-7600

Subject: Comments on SEPA Scoping for Environmental Impact Statement on Proposed Changes to the Surface Water Quality Standards

Dear Ms. Gildersleeve:

Public Utility District No. 1 of Chelan County (Chelan PUD) provides these comments on scoping issues for the Department of Ecology's (WDOE) environmental impact statement (EIS) on WDOE's proposed revisions to surface water quality standards (WQS). Chelan PUD, a Washington State municipal corporation, owns and operates the second largest non-federal hydroelectric generating system in the United States. Chelan PUD's Lake Chelan, Rocky Reach and Rock Island projects generate a combined total of approximately 11 billion kilowatt-hours of power annually. Currently, Chelan PUD is involved in re-licensing proceedings for two of its projects. The Lake Chelan license expires in 2004 (a new application was submitted to the Federal Energy Regulatory Commission in March 2002), and the Rocky Reach license expires in 2006 (a new application is due to FERC in June 2004). Energy produced from Chelan PUD's hydroelectric projects reduces the amount of energy that would otherwise be produced from fossil-fuel plants, thus reducing emissions by an amount equivalent to those produced by more than 1.5 million cars. A number of the proposed changes to WQS could affect the operation of the hydroelectric projects under new licenses. The proposed revisions to WQS also could change the processes that are used by WDOE to analyze water quality issues and determine the terms WDOE will require as conditions for granting water quality certification under section 401 of the Clean Water Act. Chelan PUD urges your careful consideration of the following scoping issues since they bear significantly on the potential viability of hydropower production in the Columbia River and the future cost of electrical energy in the State of Washington.

Chelan PUD agrees that the issues proposed by WDOE for consideration in the EIS are important issues. Chelan PUD emphasizes that there are indirect aspects of these issues, in addition to direct environmental effects, that need to be considered. In particular, there are potential consequences to society and businesses that may not be adequately considered in the economic analysis that WDOE will conduct to comply with the Administrative Procedures Act. These potential consequences will be specified individually in regard to the proposed changes later in this comment letter. Also, some additional alternatives for changes to the WQS that were presented to WDOE in public comments and workshops on the current draft revisions to the WQS need to be

considered in the EIS. These alternatives include proposals to increase flexibility in the WQS for tailoring WQS for specific conditions in waterbodies that have natural variations in water quality parameters that fall outside the general criteria for specific beneficial uses. Finally, the potential effects of the proposed revised WQS on Federal Energy Regulatory Commission (FERC) licensing of non-federal hydroelectric projects are of special concern to Chelan PUD and other non-federal hydroelectric project licensees. The EIS should consider any differences between alternatives that would affect the issuance or timing of issuance of FERC licenses.

Potential Socio-Economic Affects Specific to Topics Identified by WDOE and Use-Based Standards

Temperature Criteria

The proposed revisions to temperature criteria will potentially result in a large increase in the number of waterbodies listed as impaired (303(d) list). These new criteria will also result in "natural conditions" being the default criteria in more locations and situations because of naturally warm conditions. This will likely result in temperature issues being the most difficult water quality standard for determination of compliance because "natural conditions" can often only be estimated with modeling studies. Aside from the potential for increased costs and increased delays in permitting decision processes to become adverse socio-economic effects of this change, the costs and delays may also divert public resources into increased "process" activities and reduce the level of public resources directed at remedies for existing water quality impairments. This potential indirect effect of reducing environmental improvements should be explored in comparison of alternatives.

Dissolved Oxygen Criteria

The dissolved oxygen (DO) criteria could, in some cases, exceed the physical capacity of water to hold oxygen in solution when natural warm temperatures overlap with the spawning or rearing periods of salmonids. The purpose of the criteria is primarily directed at prevention of human effects from increasing biological or chemical oxygen demand to the point where DO levels are depleted. If natural conditions or other environmental variables, such as temperature, are the cause of DO levels falling below the WQS, then there should be an allowance for additional human effects. The natural variability in saturation DO levels at different water temperatures should be considered in evaluation of alternative DO criteria. Without this allowance, granting of NPDES permits or 401 certification and permitting of other types of human activities could unnecessarily become unreasonably difficult due to factors beyond the permitee's control. In addition to the socio-economic affects, this potential for permit bottlenecks could indirectly delay permitting and other decisions on environmental mitigation projects. The potential for this indirect environmental effect should be considered in the evaluation of alternatives.

Use-Based Standards

Use-Based Standards may improve the ability of WDOE to fine-tune the application of protective criteria to those waterbodies where the beneficial uses need more protective standards. However, sensitive species, particularly salmonids, also extensively use habitats that naturally fail to provide the water quality levels specified in the proposed WQS. This natural tendency of salmonids to use marginally suitable habitats creates a regulatory conundrum for approval of human activities. WDOE is potentially setting itself up for endless diversion of public resources into the definition of the waterbody boundaries for where it is appropriate to apply the more protective use-based

standards. This could again divert scarce public resources away from environmental improvements and into defense of decisions on permits, water diversions, enforcement and other sociological issues. The indirect environmental affects of adopting use-based WQS should be evaluated against the no-action alternative.

Additional Alternatives

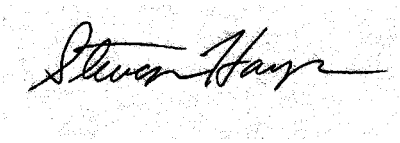
WDOE proposes to rely on Use Attainability Analysis (UAA) as the principal tool for dealing with naturally adverse water quality conditions. Chelan PUD, together with the PUDs of Douglas and Grant counties, also provided WDOE with comments advocating the establishment of procedures for setting site-specific/waterbody-specific standards/criteria and for establishment of seasonal standards/criteria. These comments were primarily intended for those water bodies that experience naturally warm water temperatures. The establishment of procedures for fine-tuning Use-Based WQS, without invoking the costly and time-consuming process of a UAA, should be considered in the alternatives. This is particularly germane to the situation where salmonids are using habitat that is naturally less favorable that the WQS established for that beneficial use.

FERC Licensing Process and 401 Certification

WDOE proposes additions to the WQS that address FERC hydroelectric project licensing and 401 Certification under the Clean Water Act. Chelan PUD supports WDOE's efforts to improve their ability to provide timely decisions on water quality in the FERC licensing process. The EIS should analyze alternative approaches to improving the process for 401 certification where "dams preclude the attainment of the use and it is not feasible to restore the water body to its original condition" 40 C.F.R. § 131.10(g) and 131.10(g)(4). This analysis should consider the effects of alternatives on the potential for use of settlement agreements and early implementation of environmental protection, mitigation and enhancement measures. Delay of implementation should be treated as a significant adverse environmental impact when analyzing alternative approaches to FERC re-licensing processes and 401 water quality certification.

Chelan PUD will provide further comments when the draft EIS becomes available for public comment. Please keep Chelan PUD on the active list for future updates and information about other water quality efforts. If you have any questions regarding these comments on the 303(d) listing policy, please contact Gregg Carrington or Steven Hays at (509) 663-8121.

Sincerely,



Steven Hays
Fish & Wildlife Consultant

cc: Bob Clubb, Douglas County PUD
Cliff Sears, Grant County PUD

SS/3971

WFPA
Washington Forest Protection Association
724 Columbia Street, N.W., Suite 250
Olympia, Washington 98501

August 15, 2002

Melissa Gildersleeve
Section Manager
Water Quality Program
WA Department of Ecology
PO Box 47600
Olympia, WA 98504-7600

Dear Melissa:

The Washington Forest Protection Association (WFPA) appreciates this opportunity to provide scoping comments in response to the Department of Ecology's (Ecology) proposal to modify the existing Surface Water Quality Standards for Washington and identify the potential environmental impacts of the proposed changes to the Water Quality Standards. WPFA members are large and small private landowners who grow and harvest trees on 4.5 million acres in Washington State.

We will focus our comments primarily on identifying issues that should be covered in the EIS and proposing reasonable alternatives.[1] Our scoping comments will suggest:

- What the Purpose and Need Statements of the EIS should reflect, thereby providing input to help narrow the focus of the EIS;
- A regulatory framework associated with the proposal for new water quality standards, thereby providing input to help determine the level of analysis and the types of data required for analysis;
- Considerations for ranges of alternatives in the EIS;
- Significant Issues that could be analyzed in the EIS

[1] We are also incorporating by reference, all other comments WFPA has submitted to Ecology by mail or electronically since the State of Washington started the triennial review of surface water quality standards. This includes WFPA comments to EPA (with copy to Ecology) dated February 22, 2002 in response to the Review of the Draft EPA Region 10 Guidance for State and Tribal Temperature Water Quality Standards (Public Review Draft, October 2001).

Purpose and Need Statements and Regulatory Framework

Need Statement: WFPA recommends that the need for new water quality standards should reflect the goals and purposes of the Clean Water Act (CWA). We remind Ecology of the consensus features of water quality standards:

> Water quality standards are not designed for use primarily as an enforcement device; they are intended to provide the ... States and local agencies with additional tools for objective and clear public policy statements on the use or uses to which specific segments of interstate waters may be put. *Their principle objective is the orderly development and improvement of our water resources...* [S.Rep. No 10, 89th Cong., 1st Sess. 9-10 (1965)] (Emphasis added)

Thus, water quality standards serve as goals or the "yardstick" to measure the adequacy and efficacy of water quality programs. The ultimate purpose of water quality standards is to help channel resources into water quality control measures that will do the most good in terms of restoring and maintaining the chemical, physical, and biological integrity of the Nation's waters. Water quality standards that are not stringent enough may lead to inadequate public and private investment in water quality improvement. Conversely, water quality standards that are more stringent than needed are likely to divert public and private resources from other programs and investments that could better achieve CWA goals.

We also recommend that the need for review and revision of water quality standards be defined within the context of activities that are (a) addressing elements of CWA § 303 and (b) expressly addressing the protection of designated uses for which new water quality standards are being developed. This would include Endangered Species Act (ESA) related planning or restoration activities designed to improve and restore salmonid habitat, including maintaining and/or restoring the physical, biological, and chemical integrity of the water. (See discussion on regulatory framework below.)

Since Ecology began its triennial review process, the environmental baseline in terms of state and federal laws, regulations, and programs to improve water quality and aquatic habitat for the most sensitive of beneficial uses has improved significantly. The change in baseline conditions is significant enough to influence the stated need for new standards and warrants consideration in the environmental review.

Purpose: WFPA recommends that the purpose for review and revision of the water quality standards should be to determine if and how the goals of the CWA could be better served by altering the key elements of the current standards in light of (1) changing baselines in actual water quality conditions, (2) existing state and federal water quality programs, and (3) improved understanding of the effects of water quality on biological resources and other water uses.

Legal and Regulatory Framework: WFPA recommends that Chapter 1 of the EIS describe the regulatory framework associated with and directly related to the water quality standard proposal. Given the iterative nature of the water quality-based approach and the roles water quality standards play in evaluating and improving both regulatory and non-regulatory programs, it will be

important to describe the major CWA programs that fit into the overall water quality control scheme,[2] including:

- 305(b) Report;
- 319 and CZARA Report[3];
- Prioritization process and completed TMDLs (See: http://www.ecy.wa.gov/programs/wq/tmdl/index.html);
- NPDES process;
- Capital facility programs to restore and enhance water quality, including sewage treatment plants and publicly owned stormwater facilities;
- Stormwater programs;
- CWA Section 401 Certifications;
- The Forest Service Memorandum of Understanding with Ecology ensuring that federal land management meets the state's water quality standards not only by the preservation of aquatic reserves but also by decommissioning roads and suspending road construction and reconstruction in sensitive areas.[4]
- River Basin Assessment as administered through the authority under the Water Pollution Control Act;
- Agricultural Compliance Memorandum of Agreement between Ecology, Washington Conservation Commission, and 47 of the state's 48 conservation districts which in part, agrees to carry out a program of agriculture water quality protection and management;
- Puget Sound Water Quality Plan;
- 27 Watershed Action Plans under ESHB 2415 (*See:* http://www.ecy.wa.gov/watershed)[5];

In addition, we suggest that Chapter 1 of the EIS also describe other state laws associated with and related to water quality protection. These laws include, but are not limited to:

- Aquatic Lands (RCW 79.90), amended 1982, '83, '87, '89, '90, '91, 2000
- Conservation District Law (RCW 89.08), amended 1939, '49, '55, '61, '63, '73, '83, '87, '89, '95, '99
- Construction Projects in State Waters "Hydraulic Code" (RCW 77.55), adopted 1949, amended '55, '83, '86, '88, '89, '91, '93, '95, '96, '97, '98, 2000
- Dairy Nutrient Management Act (RCW 90.64), adopted 1993, amended '97, '98, 2000

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[2] *See generally,* EPA. 1993.Water Quality Standards Handbook, Second Edition. Office of Water Regulations and Standards, Washington, D.C.

[3] Washington State's non-point program is currently recognized as having an "Enhanced Benefits Status." This means the state program meets nine key elements that EPA identifies for upgraded state non-point programs. EPA recognizes only seven states in the country as having met these criteria.

[4] *See:* Memorandum of Agreement between the USDA Forest Service, Region 6 and the Washington State Department of Ecology for Meeting Responsibilities Under Federal and State Water Quality Laws.

[5] For example, see: *Lake Washington/Cedar/Sammamish Watershed (WRIA 8) Near Term Action Agenda for Salmon Conservation. February 2002.*

- Forest Practices Act (RCW 76.09), adopted 1974, amended '75, '84, '85, '87, '88, '89, '90, '93, '94, '95, '96, '97, '98, '99, 2000
- Growth Management Act (RCW 36.70A), adopted 1990, amended '91, '93, '94, '95, '96, '97, '98, '99, 2000
- Hazardous Waste Management Act (RCW 70.105), adopted 1975-76, amended '80, '83, '84, '85, '86, '87, '88,'89, '91, '92, '94, '95
- Highway Related Storm Water Control (RCW 90.78), adopted 1996, amended '99
- Model Toxics Control Act (RCW 70.105D), adopted 1989, amended '91, '93, '94, '95, '97, '98, '99, 2000
- Oil and Hazardous Substance Spill Prevention and Response Act (RCW 90.56), adopted 1969, amended '70, '71, '85, '87, '89, '90, '91, '92, '94, '98, 2000
- Pesticide Application Act (RCW 17.21), adopted 1961, amended '67, '69, '71, '74, '75-6, '79, '81, '85, '86, '87, '88, '89, '91,'92, '93, '94, '96, '97, '99
- Pesticide Control Act (RCW 15.58), adopted 1971, amended '79, '82, '83, '86, '89, '91, '92, '94, '95, '97, 2000
- Puget Sound Water Quality Protection (RCW 90.71), adopted 1996, amended '97, '98
- Salmon Recovery Act (RCW 77.85), adopted 1998, amended '99, 2000
- Shoreline Management Act (RCW 90.58) adopted 1971, amended '72, '73, '74, '75, '77, '79, '80, '82, '83, '84, '86, '87, '88, '89, '92, '94, '95, '96, '97, '98
- State Environmental Policy Act (RCW 43.21C), adopted 1971, amended '73, '74, '75, '75-6, '77, '81, '82, '83, '85, '92, '93, '94, '95, '96, '97, '98, '99
- Stewardship on Non-industrial Forests and Woodlands (RCW 76.13), adopted 1991, amended '99, 2000
- Water Pollution Control Act (RCW 90.48), amended 1967, '69, '70, '71, '72, '73, '74, '75-6, '79, '81, '83, '85, '87, '89, '91, '94, '96, '96, '97, '98, '99
- Watershed Planning Act (RCW 90.82), adopted 1997, amended '98.

Through these and other laws, a number of activities are being implemented to protect water quality and aquatic habitat functions. Understanding these related programs (see list below) will assist in analyzing how the water quality standards will be used and the environmental impacts of current water quality standards and alternative ways they might be amended. Many of these programs have completed SEPA analyses or other environmental reviews that may provide useful data in relation to their effectiveness in protecting sensitive beneficial uses:

- Forest Practices rules covering eight million acres of state and private forestland under the ***Forests & Fish Report*** (ESHB 209 1)(See:http://www.wa.gov/dnr/htdocs/fp/fpb/rules.html);
- 55 completed Watershed Analyses (WAC 222-22) as authorized under the Forest Practices Act (RCW 76.09);

- The Department of Natural Resource's 1.6 million-acre Habitat Conservation Plan, including aquatic habitat protection for native salmonids;[6]
- Ecosystem Standards for State-owned Agriculture and Grazing Lands (SHB 1309);
- Salmon Recovery Planning efforts through the Governor's Office. Current activities are found in the report, ***Extinction is Not an Option*** (See: http://www.governor.wa.gov/esa);
- The ***Shared Salmon Strategy*** to develop a recovery plan for listed salmonids in Puget Sound. Participants include representatives from the Governor's Office, the Department of Fish and Wildlife, the US Fish and Wildlife Service, the National Marine Fisheries Service, and NW Indian Fisheries Commission (See: http://www.sharedsalmonstrategy.org);
- Designation and protection of critical or environmentally sensitive areas under the Growth Management Act (GMA). These areas include (a) wetlands, (b) areas with critical recharging effect on aquifers used for potable waters, (c) fish and wildlife habitat conservation areas, (d) frequently flooded areas, (e) geologically hazardous areas;
- Management measures as a result of the implementation of the State Environmental Policy Act's (SEPA) Environmental Elements (Earth, Water, Shoreline and Land Use);
- Shoreline Master Program development as required by the Shoreline Management Act;
- Steelhead Habitat Inventory and Assessment Project (SSHIAP). Co-sponsored by the Washington State Department of Fish and Wildlife and the Northwest Indian Fisheries Commission. (*See:* http://www.nwifc.wa.gov/sshiap2/products.asp
- Puget Sound Water Quality Action Team's Puget Sound Ambient Monitoring Program (PSAMP) (*See:* http://www.wa.gov/pswqat/Programs/PSAMP.htm);
- 648,498 acres of state-owned and managed lands are recently reported to provide habitat and environmental protection while allowing recreational access consistent with these designated uses. (*See:* IAC 1999 Public and Tribal Lands Inventory - http://www.wa.gov/IAC/plip.html

A number of significant habitat conservation plans (HCPs) by private and public landowners have been approved by USFWS and NMFS under the Section 10(a) of the Endangered Species Act. These HCPs specifically address designated uses, which will be the focus of the EIS and the environmental impacts of new water quality standards. All of these HCPs have gone through NEPA analysis. Currently, approved HCPs help conserve approximately 723,000 acres of private forestland by protecting native salmonids and aquatic habitat, including water quality, from potential adverse effects from forest management activities.

DNR also has an approved HCP covering 1.6 million acres of state forestland, including specific aquatic habitat measures that will address silvicultural impacts to water quality such as temperature and sediment. Ecology's EIS for new water quality standards should also acknowledge that the City of Seattle completed a Habitat Conservation Plan in the 90,500-acre Cedar River Watershed and started implementation in April 2000. The HCP provides significant benefits to 83 species of fish and wildlife resources found throughout the entire Cedar River system and went through NEPA analysis. The City of Tacoma has completed a multi-species HCP

[6] ESA § 10(a)(1)(B)

in the Green River Watershed. The HCP will include conservation strategies for 14,188 acres. Conservation strategies are developed for Chinook salmon and bull trout, as well as 30 other listed and unlisted species that may be affected by Tacoma Water Division's activities in the Green River and the Upper Green River watershed. The HCP went through NEPA analysis.

Federal lands in the state are also are managed to protect aquatic habitat and water quality from adverse human-caused impacts and should be acknowledged in the EIS and in assessing the environmental impacts of new water quality standards. Currently, half of all federal forestland in Washington is designated as parks or wilderness. Washington's Interagency Committee for Outdoor Recreation's **1999 Public and Tribal Lands Inventory** reports that 9,143,462 acres of federal uplands in the state of Washington are dedicated to habitat and environmental protection.[7]

The Northwest Forest Plan and provisions under other mandated programs through the National Forest Management Act control how the US Forest Service manages the National Forests in the state of Washington. The Northwest Forest Plan is expected to allow for the viability of over 1000 species dependent on older forests within the range of the northern spotted owl and went through extensive NEPA analysis. Species include bryophytes, fungi, lichens, vascular plants, mollusks, amphibians, fish, birds, and mammals.[8] Eastern Washington National Forests are managed under the mandates of the "eastside screens," which protect sensitive riparian areas.

Management plans also are required for other major federal land holdings, including those in the National Park System and National Wildlife Refuge System. Those management plans also are designed to help achieve water quality standards, recovery of ESA-listed species, and other environmental values.

There are a number of new or re-vamped federal programs to help address water quality programs on agricultural lands. These include:

- Environmental Quality Incentive Program;
- Conservation Reserve Program;
- Wetlands Reserve Program;
- Conservation Reserve Enhancement Program;
- Conservation Management System as defined in the Field Office Technical Guide of the USDA – Soil Conservation Service to minimize the delivery of sediment from agricultural lands to surface water.

In addition, the US Geological Survey has recently started the National Water Quality Assessment (NAWQA) program. The goals of the program are to summarize the status and trends of surface and ground water quality in the study area, to describe the processes affecting water quality and the aquatic ecology, and to get the results to managers, policy makers, and the public in the most usable and timely manner possible.

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[7] *See:* Interagency Committee for Outdoor Recreation. 2001. The 1999 Public and Tribal Lands Inventory – Final Report, December 2001. (A report to the Legislature as required by Section 329(7), Chapter 235, Laws of 1997).

[8] See: FEMAT (Forest Ecosystem Management Assessment Team). 1993. Forest ecosystem management: an ecological, economic, and social assessment. USDA Forest Service, National Marine Fisheries Service, Bureau of Land Management, Fish and Wildlife Service, National Park Service, and Environmental Protection Agency, Portland, OR and Washington D.C. pp V-72-V.79.

The Range of Alternatives Must Reflect the Purpose of Water Quality Standards

WFPA suggests that any alternative that is analyzed in the EIS should reflect the purpose of state water quality standards as set out in CWA §303(c)(2).

> [W]ater quality standard[s] ... shall be such as to protect the public health or welfare, enhance the quality of water and serve the purposes of this Act. **Such standards shall be established taking into consideration their use and value for public water supplies, propagation of fish and wildlife, recreational purposes, and agricultural, industrial, and other purposes, and also taking into consideration their use and value for navigation.** 33 USC § 1313(c)(2)(A) (Emphasis added).

Additionally, state standards must consider many uses of water, not just one:

> [T]he CWA directs states to consider a variety of competing policy concerns during [triennial] reviews, including a waterway's "use and value for public water supplies, propagation of fish and wildlife, recreational purposes, and agricultural, industrial, and other purposes." *American Paper Institute, et al. v. US Environmental Protection Agency,* 996 F. 2d 346, 349 (D.C. Cir. 1993)

The Range of Alternatives Must Protect Existing Uses and Depend Upon the Best Scientific and Commercial Data Available

All alternatives analyzed by the EIS need to reflect EPA rules that direct States and Tribes to establish water quality criteria designed to protect "existing uses," unless protecting them is not considered "feasible" for one or more of certain specified reasons (40 CFR 131.10). Further, EPA rules define "existing uses" as "those uses actually attained in the water body on or after November 28, 1975 . . . ." (40 CFR 131.3(e)). Uses that may have been attained during pre-settlement times or other times before 11/28/75 are not given the same protection as "existing uses."

Additionally, Ecology should anticipate that EPA approval of the final water quality standards will undergo ESA Section 7 consultation. All alternatives analyzed by the EIS should reflect that ESA §7(a)(2) requires use of the "best scientific and commercial data available" when conducting consultations. In a recent court decision, the Ninth Circuit Court of Appeals made it clear that the agency must base ESA compliance decisions on factual knowledge related to species presence and not speculation of where species might or may have occurred at some point in time:

> [W]e find that it is arbitrary and capricious to issue an Incidental Take Statement for the razorback sucker when the Fish and Wildlife Service's speculation that the species exists on the property is not supported by the record. We agree with the district court's ruling that the Fish and Wildlife Service failed to establish an incidental taking because it did not have evidence that the razorback sucker even exists anywhere in the area. *Arizona Cattle Growers Association v. US Fish and Wildlife Service, et al.,* _ F.3d_, 2001 WL 1598208 (9th Cir. 2001), at p. 13.

Further, §7(a)(2) should not be construed broadly to encompass situations in which harm to a listed species is merely "possible" or even "likely" in the future due to a proposed action.

> "We believe that Congress has spoken to the precise question ... [W]e believe that the definition of "taking" in Sections 7 and 9 of the ESA are identical in meaning and application."[9]

Habitat modifications can result in "take," but only where actual death or injury to identifiable, currently living members of the species occur, that death or injury is foreseeable, and the habitat modifying activities are the proximate cause of the actual death or injury.[10] Possible future "takes" must be reasonably certain to occur before they generate legal consequences.[11]

Finally, when developing alternatives to be included in the EIS for proposed water quality standards, it is important that Ecology does not feel undo pressure from federal agencies concerning ESA consultation. EPA does not gain substantive power through Section 7 ESA consultation with NMFS or USFWS and EPA cannot use ESA to increase its requirements for state water quality standards.[12] EPA must approve a revised state standard if the standard meets the requirements of the CWA and EPA's national rules. 33 USC § 1313(c)(3).

The Range of Alternatives Must Reflect Combinations of Numeric and Narrative Criteria Based on Quantifiable, Objective, Repeatable Methods and Not Optimize for a Single Use

WFPA suggests that all water quality standard alternatives that include analyzing the environmental effects of proposed temperature criteria should recognize the general principles of stream heating and cooling: (a) climatic conditions (air temperature, relative humidity, precipitation, wind velocity) affect water temperature and have considerable variability over space and time, so water temperatures respond to changes in weather conditions that occur on different dates in different years and different drainages, (b) canopy closure, stream depth, air temperature, and groundwater inflow are primary regulators of local stream temperatures, (c) water temperatures adjust to local environmental conditions, (d) streams can both heat and cool along their length, (e) local inputs can have measurable but temporary effects, (f) in most cases streams naturally warm in a downstream direction, and (g) at some point, streams become too wide for riparian canopy to affect temperature.

Suggested Alternatives

WFPA suggests that the EIS consider the following alternatives:

1. No Action Alternative: this alternative would retain the current water quality standards, which would serve as a baseline against which to compare the advantages and disadvantages of all other alternatives;

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[9] *Arizona Cattlegrowers' Ass'n. v. U.S. Fish & Wildlife Service*, 273 F. 3d 1229 (9th Cir., 2001)
[10] *Sweet Home Chapter v. Babbitt*, 515 U.S. 687; 115 S. Ct. 2407 (1995).
[11] *Forest Conservation Council v. Rosboro Lumber Co.,* 50 F.3d 781, 783 (9th Cir. 1995); *Defenders of Wildlife v. Bernal,* 204 F.3d 920 (9th Cir., 2000).
[12] See*: American Forest & Paper Association v. EPA,* 137 F. 3d 291, 2999 (5th Cir. 1988*)("[Section 7 consultation] confers no substantive powers."*) and *("EPA cannot invoke the ESA as a means of creating and imposing requirements that are not authorized by the CWA."*)

2. A preferred alternative reflecting the proposal currently displayed on the Ecology website, including, though not limited to, the following proposed revisions which would more clearly link the proposed criteria to current scientific knowledge:

    - The use of a 7-Day Average of the Daily Maximums (7-DADM) metric.
    - A 13^{o}C (7-DADMs) char (bull trout and Dolly Varden) criterion.
    - 16^{o}C (7-DADM) for waters with both salmonid rearing and spawning as designated uses. (There is no need for a separate spawning criterion, since most waters with a summer maximum of 16^{o}C will cool down sufficiently to protect spawning.) and a 17.5^{o}C (7-DADM) for waters with only salmonid rearing as a designated use.
    - Only specific actions would trigger an antidegradation review (e.g., NPDES permits).
    - Actions that do not have a measurable effect on water quality will be exempted from antidegradation.
    - Public notice requirements will be simplified to match existing requirements.
    - Ecology will structure the "Outstanding Natural Resource Waters" (Tier III) so that a broader public input will be required before waters are designated.

3. An alternative that relies on narrative criteria, particularly for temperature, which recognize the validity of aquatic resource protection programs that (A) conserve aquatic functions, (B) address watershed inputs that affect thermal regimes, and (C) require monitoring of physical, biological, and chemical indicators to drive adaptive management. As an example of how to frame an alternative that relies on "program-based narrative criteria," we provide an example of a water quality-based program – the Forests & Fish Report (FFR) forest practices rules, for non-federal timberlands in the state of Washington.[13]

    The FFR resulted from extensive multi-stakeholder negotiations among three state agencies (the Departments of Natural Resources, Ecology, and Fish and Wildlife), three federal agencies (EPA, USFWS, and NMFS), Tribes, industrial and non-industrial private landowner organizations, and (until the later stages) representatives of environmental organizations. The FFR is built on strategies developed by the National Marine Fisheries Service (NMFS): restoration of desired condition through the reliance over time, on natural processes. This approach to salmon conservation planning also has been used to guide habitat improvements through HCPs approved by USFWS and NMFS under the ESA and other regulatory and federal land management programs.

    FFR-based forest practices rules are designed to protect key instream, riparian, and wetland functions. NMFS and US Fish and Wildlife Service (USFWS) have reviewed the effectiveness of FFR in addressing these functions through their role as the federal fish agencies in charge of ESA compliance and principle authors of the FFR. The following are specific examples of watershed input issues addressed by the FFR program

    - Large woody debris;
    - Temperature, mostly as measured by shade (canopy closure);

[13] There may be other water quality based programs that would be able to be analyzed under this alternative.

- Bank stability;
- Nutrient cycling;
- Sediment filtration;
- Hydrologic regimes;

NMFS and USFWS determined, through their active involvement in the development of FFR, that these functions can be achieved on managed non-federal forestland in the state of Washington by (a) providing "no touch" and managed buffers within a site potential tree height, (b) protecting special sites important to amphibians and controlling temperature in non-fish, perennial streams, and (c) controlling management induced mass wasting events by protecting specific features on the landscape that are prone to sliding when managed. FFR forest practices rules will provide these kinds of buffers in addition to restrictions on harvesting and road building. The effectiveness of the rules will be monitored and validated through a science-based adaptive management program and enforceable state-based regulations. One measure of the effectiveness of these rules will be State water quality standards. However, FFR will also include many other measures to evaluate the effectiveness of desired future conditions based on natural ecosystem functions.

FFR is not expected to produce instant results. Rather, it is expected to put the non-federal forestlands of the state onto a trajectory that will improve salmon habitat, including water quality, by restoring desired conditions as soon as practicable, primarily through restoring and protecting *natural processes*. All parties to the FFR, including EPA, USFWS and NMFS, concluded that FFR reflected the most that could be reasonably expected of non-federal forestland owners and that the adaptive management provisions of FFR were sufficient to require any mid-course corrections that might be proven necessary.

Since no other restrictions beyond FFR can reasonably be expected at this point in time, compliance with FFR could be presumed to result in water temperature regimes and reduce management induced sediment at levels sufficiently protective of salmonids within non-federal forestlands unless and until there was clear evidence of acute thermal stress at a particular location and time. The programs-based narrative standard alternative would recognize that, although anthropogenic impacts on water temperature from current and future forest management activities have been reduced and legacy impacts from past activities are being addressed, the reliance on natural processes means it will take time for water temperatures and sediment inputs in and from non-federal forestlands to approach natural conditions.

Under this alternative, FFR or other programs based on desired future conditions and naturally occurring biological and physical watershed processes, could be recognized as an effective aquatic resource protection program. Waters could be presumed to be in compliance with narrative water quality criteria for temperature and turbidity so long as the regulated entity complied with the aquatic water quality-based program that fits a similar profile as FFR.[14]

[14] For example, narrative criteria could be something to the effect of: *"Human caused temperature changes will have no significant adverse effect on spawning, survival or growth of fish species for which the waters are being managed."*

Environmental Issues of Significance

1. Protective criteria for cold water species such as bull trout spawning and rearing.

2. The EIS should analyze the anticipated advantages and disadvantages of each alternative on aquatic habitat planning under state and federal laws and programs. In other words, to what extent would alternative versions of water quality standards affect state and federal programs intended to protect the chemical, physical/habitat, and biological qualities of waterbodies. This should include analyzing short-term impacts such as requirements for buffers to reduce sediment and control temperature and long-term impacts due to increases in specific aquatic habitat conditions across the landscape e.g., forest practices on federal, state, and private forestland will enhance and restore the quality of the water by regulating forest practices to provide cool water by maintaining shade, groundwater temperature flow, and other watershed processes controlling stream temperature, minimizing the delivery of management-induced coarse and fine sediment into streams, and protecting against chemical entry into streams, and maintaining surface and groundwater hydrologic regimes (magnitude, frequency, timing, and routing of stream flow). In addition, forest practices on public and private land will provide for habitat features important to sensitive beneficial uses by providing complex and productive in- and near-stream habitat by recruiting large woody debris and litter.

3. If the EIS describes a historical context for reviewing and revising water quality standards that meet the goals of the CWA, the historical context should include the positive impacts of humans implementing protection measures for sensitive beneficial uses including, but not limited to, restoration activities, changes in land use, mitigation practices, and the maintenance of the chemical, physical, and biological integrity of water.

   For instance, Ecology should analyze the benefits to water quality protection provided by various land conservation programs being implemented in the state.[15] Forestland, in particular, is being traded or purchased in order to provide conservation values that will benefit water quality and aquatic habitat protection. The following provide just a few examples of conservation exchanges or purchases just since the year 2000 that will need to be analyzed within the context of revising water quality standards:

   - The so-called "I-90 Exchange" was completed with the transfer of deeds between the Forest Service and Plum Creek Timber Co. Plum Creek traded 31,713 acres, with most of the land adjacent to Interstate 90 east of Seattle, in exchange for 11,566 acres in federal lands ranging from the central to the southern Cascades. The 31,713 acres are now managed by the Forest Service and have high

---

Such a narrative statement could be supplemented by a numeric temperature standard that precludes exceeding acute maximum thresholds for the assigned beneficial use. Narrative temperature criteria would complement aquatic planning and programs that include ecological considerations for habitat structure and biotic interactions while addressing temperature regimes in multiple dimensions, e.g. magnitude, frequency, duration, timing, and rate of change.

[15] There are numerous programs such as the Natural Heritage Program, USFWS Cooperative Endangered Species Conservation Fund, Sustainability programs, and other government and private conservation endeavors that should be analyzed by Ecology in terms of identifying conservation trends and changes in land use status that will benefit water quality.

environmental value. Plum Creek also donated an additional 844 acres of forestland to the federal government in Kittitas County near Lost Lake, Lake Cle Elum, and Mount Margaret.[16]

- 2521 acres in the Cascades were purchased by the Cascades Conservation Partnership and were donated to the Forest Service. The 1,241-acre Negro Creek Valley parcel, which is adjacent to the southeast corner of the Alpine Lakes Wilderness Area, was purchased from Longview Fibre and 1,280 acres, on the east slopes of the Cascades, south of I-90 was purchased from Plum Creek. These lands will be managed according to the Forest Plan for the area. The purchases are part of a larger preservation campaign that began in 2000 and has resulted in l3,000 acres of land being bought and now managed by the Forest Service for habitat and recreational activities.

- In late 2000, Congress passed and the President signed into law, the largest increase in conservation spending in the history of the United States. The bill includes more than $60 million for Washington state projects, including:
  - $8.6 million to acquire approximately 4,711 acres of Plum Creek Timberland in the central Cascades;
  - $7.4 million for the purchase of 3,971 acres in the Mountains to Sound Greenway along I-90 (an additional 1,800 acres is under option for purchase when funds become available); and

- Rayonier transferred a 724-acre tract along the Hoh River to the Western Rivers Conservancy. The property includes approximately half a mile of road frontage on the Upper Hoh Road leading into the Hoh River entrance of the Olympic National Park. The property also includes both sides of the Hoh River for two miles.

- The Huckleberry Land Exchange, as modified in January 2002, resulted in the trade of 3,600 acres of national forest land to Weyerhaeuser for about 30,000 acres of Weyerhaeuser land to national forest management. Weyerhaeuser donated approximately 2,000 additional acres to the Forest Service. Two additional special areas also were established on Forest Service lands, including a 10,900-acre area in the Greenwater River drainage, which will provide long-term protection of old-growth forests, fish and water quality.

- Weyerhaeuser Companies Snoqualmie Preservation Initiative will result in the preservation of Snoqualmie Falls view sheds and critical forestlands, and create a framework for accommodating future growth. This project preserves 150 acre plot adjacent to Snoqualmie Falls called Falls Crossing and protects 9,000 acres of

[16] An additional provision of the I-90 exchange legislation placed 15,430 acres in an option agreement to be purchased with funding available through the Land and Water Conservation Fund (LWCF). To date, 1,844 acres have been purchased and are now managed as part of the Gifford Pinchot National Forest and 3,914 acres in the I-90 corridor east of Snoqualmie Pass will be purchased early this year. The remaining 9,672 acres will be purchased as funds are appropriated over the next two years.

forestland from development through permanent conservation easements near the I-90/Highway 18 intersection.

4. The relative environmental impact of revised water quality standards in context of other interconnected factors that impact overall health of fish species.

5. An analysis of proposed standards and the ability to implement different alternatives. Analysis should include the practicability challenges associated with each alternative. For instance, if an alternative supports criteria based on the actual presence of fish during at certain life cycle stage (spawning, rearing) how will the physical locations, at which the standard apply, be identified?

Sincerely,

Ann Goos, Director of Environmental Affairs

cc. Tom Eaton, EPA
John Palmer, EPA

Columbia River Inter-Tribal Fish Commission

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1977-2002

25 Years of Protecting Salmon and Tribal Treaty Rights

August 16, 2002

Melissa Gildersleeve
Water Quality Section Manager
Department of Ecology
PO Box 47600
Olympia Washington 98504

RE: Scoping Comments on Proposed Changes to Water Quality Standards for Temperature, Dissolved Oxygen and Bacteria

Dear Ms. Gildersleeve:

The Columbia River Inter-Tribal Fish Commission (CRITFC) appreciates the opportunity to offer brief comments on scoping for an EIS on the above proposed changes to State of Washington Water Quality Standards. We anticipate that we will be filing more extensive comments on subsequent stages of this process.

We have serious concerns about several of the proposed changes. These concerns were detailed in our February 21, 2001 comments on Ecology's proposed Water Quality Standards for Surface Waters (Chapter 173-201A WAC). We incorporate by reference these into these scoping comments and request Ecology formally address them in writing in this NEPA process.

In addition, we have the following comments:

- We have been participating in regional temperature criteria reviews along with Ecology staff. We do not support increasing the existing temperature standard as it will not protect the beneficial uses for salmon, lamprey and resident fish that are critical to our member tribes. Instead, we advocate reducing the existing standard. We also have recently heard Ecology staff discussions with respect to offering site specific standards in 401 certificates for FERC project licensings for waters impacted by the presence and operation of hydro projects. This proposal is consistent with Ecology's proposed standards and is unacceptable to CRITFC. Water quality standards must be upheld to support aquatic beneficial uses regardless of dams or other human induced degradation.

- As we stated in our February 21, 2001 comments, we do not support the proposed change from a class-based to a use-based standard. We believe this change will allow industrial and agricultural users to incrementally degrade and/or prevent recovery of critical habitat necessary for protection and recovery of salmon and other fish species vital to our member tribes.

- We do not support the reduction of dissolved oxygen levels in the proposed standards. For example, salmon commonly rear and spawn in the same areas and need the maximum protection of a 9.5 mg/l standard offered under the existing standards for Class AA waters.

- Because our member tribes' treaties date back to 1855, we are concerned that the proposed anti-degradation standard only addresses beneficial uses in a particular body of water since 1975, when many non-tribal activities already caused significant degradation of waters critical to fish. Such past degradation and future degradation is not in the tribes' interest, even though Ecology may determine it is in the non-tribal interest to allow it to occur. Ecology should address this issue directly through our member tribes in government-to-government consultation.

We appreciate the opportunity to file these brief comments with Ecology. We look forward to working with Ecology in the NEPA process to devise new standards that are more protective of beneficial uses than the existing standards. The existing standards, in our current assessment, are more protective than Ecology's proposed standards.

Sincerely,

Robert Heinith
Hydro Program Coordinator

Kolosseus, Andrew

From: DSwindale@ci.university-place.wa.us
Sent: Friday, July 26, 2002 1:13 PM
To: Kolosseus, Andrew
Subject: RE: Subscribe

In accordance with WAC 197-11-444 "Elements of the Environment" both Surface water movement (quality & quantity) (WAC 197-11-444(1)(c)(i)) and Land and Shoreline use (WAC 197-11-444(2)((b)) are appropriate environmental impacts to address in an EIS. Our concern is how will the new water quality standards impact how Washington Cities and Counties are required to address population and economic growth in accordance with GMA. Could new water quality standards limit development in critical areas (near water or shorelines)? If the new standards require a greater degree of water quality for surface water discharged from private developments and /or municipal stormwater systems what will be the impact? How can it be mitigated?

----------> "Kolosseus, Andrew" <AKOL461@ECY.WA.GOV> - 07/26/2002 12:39 PM

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>----------

To: "'DSwindale@ci.university-place.wa.us'" <DSwindale@ci.university-place.wa.us>
cc:
Subject: RE: Subscribe

>----------

Thanks for the message. Any chance you could provide more details for the EIS? What sort of environmental impacts are you suggesting (the EIS only addresses environmental impacts – we'll do another analysis under APA to address economic issues)? Any ideas for alternatives that should be considered? Thanks.

Andrew Kolosseus
Water Quality Standards
Washington Department of Ecology
PO Box 47600; Olympia, WA 98504-7600
akol461@ecy.wa.gov
(360) 407-7543
www.ecy.wa.gov/programs/wq/swqs

----- Original Message -----

From: Dswindale@ci.university-place.wa.us
[mailto:DSwindale@ci.university-place.wa.us]
Sent: Friday, July 26, 2002 10:17 AM
To: ECY RE SWQS
Cc: AKane@ci.university-place.wa.us; GCooper@ci.university-place.wa.us
Subject: Subscribe

1. Please send updates re: Surface Water Quality Standards.

2. Re: Scope of EIS needs to include impacts to:
a. Land and Shoreline Uses
b. Stormwater discharge.

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Corporate Headquarters
PO Box 9777
Federal Way WA 98063-9777
Tel (253) 924 2345

August 14, 2002

Melissa Gildersleeve
Water Quality Program
Washington Department of Ecology
P.O. Box 47600
Olympia, WA 98504-7600

Dear Ms. Gildersleeve:

Subject: Request for Comments on Scope of EIS for Modifying the Washington Surface Water Quality Standards in WAC 173-201A

Thank you for the opportunity to provide input on this topic. The starting point for our analysis includes the existing WAC 173-201A *Water Quality Standards for Surface Waters*, the last available preliminary draft of revisions to this regulation (dated December 2001), and the presentation on WQS "Future Directions" by Megan White at the June 26 Water Quality Standards Discussion Group meeting. While this is a significant amount of information it is, in reality, not sufficient to offer quality comments for the purpose of scoping an EIS. Only when the formal agency proposal is in hand will it be possible for stakeholders to suggest detailed alternatives which might inform on more effective or efficient or reasonable regulatory approaches worthy of consideration. That said, listed below are several of the subject areas of proposed regulation revision and what we believe to be some of the regulatory alternatives worth examining in this EIS.

We will note that the Washington Forest Protection Association has submitted extensive comments in response to this request. Weyerhaeuser Company fully endorses the WFPA contribution and will not attempt to duplicate those comments.

EIS Discussion Area	Suggested Issues for Analysis
Non-project SEPA review and development of an EIS	• Ecology should explain what the relationship is (if any) between the EIS for the impending revision of WAC 173-201A, and the required evaluation described in RCW 34.05.328 *Significant Legislative Rule*.
Definition and application of regulatory concepts relating to "Natural Conditions"	• This EIS should evaluate an alternative which more directly addresses the meaning and practical implementation of the "natural conditions" concept. The last available preliminary draft of water quality standards revisions (December 2001) includes concepts and criteria described as "Exemption for Unusually Warm Weather" and "Naturally Warm Temperature or Revised System Potential." Related concepts used in Ecology Water Quality Program guidance documents include irreversible "human impacts" and "human impacts in excess of the allowable limits beyond natural conditions." In addition, the existing WAC 173-201A-070(2) states that water quality criteria are effectively reset if the natural conditions are of a lower quality than

Definition and application of regulatory concepts relating to "Natural Conditions" (cont.)	the assigned criteria. Taken together, there is a compelling need for Ecology to integrate these concepts in clear rule language. Ecology's EIS should favorably examine the merits of these regulatory concepts to provide for water quality criteria adjustments due to climatic or geophysical conditions, or where irreversible human activities will preclude achievement of characteristic uses and/or water quality criteria. The EIS should examine practical implementation issues related to these concepts.
Bacteria Criteria	• The EIS should provide a science-based explanation that the presence of fecal coliform, *E-coli* and enterococci above certain water column concentrations are meant to serve as conservative indicators of the presence of disease-causing pathogens. • This EIS should consider a regulatory alternative which allows for the development and reliance on either a site-based or source-specific alternative bacteria metric. This alternative would place the burden on a proponent to demonstrate to the satisfaction of the Department of Ecology that the alternative bacteria metric is a more direct measure of the presence of known human pathogens. The December 2001 preliminary draft WQS revision included a regulatory concept identified as "Alternative Bacteria Indicator Allowance" which offers some of the features of this suggested EIS alternative. The EIS should examine whether a more specific measurement of human health pathogens might have advantages (or not) in the regulation of areas or sources, and also whether providing for this alternative might (or might not) lead to public and private cost reductions in the protection of human-health and waterbody characteristic uses.
Waterbodies created by humans and subsequently managed for the removal or containment of pollution	An alternative which should be examined in the EIS would be the establishment of a specific waterbody class to address constructed stormwater conveyance and treatment systems. No characteristic uses should be assigned to this waterbody classification. Only narrative water quality criteria relating to "aesthetic values" and "toxic, radioactive, or deleterious material concentrations" should be considered. The EIS should compare the practical reality and cost of constructed stormwater treatment systems being able to meet this proposed alternative, as compared to achieving the current Class AA, A, or B water quality criteria and designated uses. The EIS should analyze the environmental value of diminished characteristic uses implied by this alternative.

Antidegradation Plan	• The existing WAC 173-201A-070 and -080 should be retained as the baseline antidegradation plan for EIS analysis. Washington's antidegradation regulation and plan have been determined by the Environmental Protection Agency to be compliant with the Clean Water Act. Pending some federal rule change or published national guidance, Washington's program does not need to be altered. • An alternative to the baseline would be an enhanced program based on existing WAC 173-201A-070 and -080. This alternative could consist of more complete documentation of the implementation of existing antidegradation review "tools." Ecology permit writers generally rely on standardized "boilerplate" discussion in NPDES Fact Sheets to describe antidegradation assessments which, in fact, occur. These tools include the requirement for an AKART review; "reasonable potential" analysis to assess WQS attainment; mixing zone prerequisites including critical discharge conditions, habitat protection, support of characteristic uses, protection of ecosystem and public health, mixing zone size minimized; mixing zone size criteria; the prospect of WQS-based permitting; agency authority to require effluent and ambient water quality monitoring, existing provisions to nominate Outstanding Resource Waters, etc. Ecology's analysis of this alternative should seek to quantify the environmental and regulatory value of this enhanced approach, and to quantify the resource expenditure to accomplish it (both WDOE and project proponent). • Ecology's proposal in the Future Directions presentation should be examined in the EIS. The analysis should seek to determine the number of activities subject to the antidegradation program, the agency and project proponent costs to satisfy both the administrative process and potentially the "beyond-AKART" pollutant reduction requirement, and the water quality improvements which might be expected from implementation of the anti-degradation program.

Sincerely,

Ken Johnson
Washington Regulatory Affairs Manager

PUBLIC WORKS

July 29, 2002

Melissa Gildersleeve
Department of Ecology
P.O. Box 47600
Olympia, WA 98504-7600

Re: Request for Comments on Scope of EIS for modifying the existing Surface Water Quality Standards

Dear Ms Gildersleeve:

Thank you for the opportunity to comment on the scope of the EIS. The following comments, submitted on behalf of the City of Everett, address the need for the EIS to consider options for the conversion from class based to use based criteria for marine waters and the need to consider the baseline alternative for anti-degradation provisions.

In considering proposed changes to the Water Quality Standards Regulation, Everett believes that the EIS should also consider the base line (do nothing) alternative. The baseline alternative will reflect the practices currently in place and being implemented. In some cases, the baseline alternative may be the better choice. The evaluation in the EIS helps to recognize when that is the case. Everett believes the baseline alternative is the optimal alternative with regards to the proposed rule revisions for implementing antidegradation provisions in Washington.

The discussion on the following pages may help the EIS to describe how anti-degradation is currently implemented, both in regards to the NPDES program and also to the additional protection of specific waters. To my knowledge, Ecology has not been fully aware of how their various actions have related to anti-degradation requirements. Consequently EPA has not been able to understand Washington's program, which explains why EPA has pushed the state to be more explicit in their procedures. The EIS can be used to explain our current practices and proposed changes and it is a valuable tool to inform both the public and other agencies.

Very truly yours,

Tom Thetford, P.E
Utilities Director

CITY OF EVERETT • 3200 Cedar Street • Everett, WA 98201 • (425) 257-8800 • Fax (425) 257-8882

Evaluation of the change to use based standards for marine waters

The EIS needs to evaluate alternatives for the conversion from class based to use based standards for marine waters. The EIS offers the ability to identify and correct an error in the present water quality standards, rather than to perpetuate the error in the conversion to use based standards.

The EIS needs to consider the fact that the present salmonid and other fish characteristic uses in our present Class AA and Class A waters differ from Class B waters only in that they also support salmonid spawning. This is essentially a carry over from the freshwater standards. Salmonid spawning is not a characteristic use in marine waters; so consequently, the temperature and dissolved oxygen standards associated with Class B waters provide full support and protection for salmonids and other fish. Therefore, the EIS should evaluate the alternative of not creating three different sets of standards for three different uses associated with salmonids and other fish, when one (that associated with Class B) will do. Further considerations to support just going with the Class B standard include:

- The Puget Sound Ambient Monitoring Program reports have typically evaluated dissolved oxygen by comparing observed levels to 5 mg/1 (the same as the Class B numeric standard), rather than by comparing to the various marine dissolved oxygen standards.

- Past 303(d) list decision matrices have identified a high percentage of observations failing to meet the numeric dissolved oxygen standards in many Class AA waters, such as Hood Canal and by the San Juan Islands. These were not listed because Ecology was able to determine that these conditions were natural, which is allowed by the standards. This helps to identify the lack of relevance of dissolved oxygen standards higher than 5 mg/l.

Anti-degradation

The EIS needs to fully understand and describe the baseline condition of how anti-degradation is implemented in Washington. There is more in regulation and implementation to anti-degradation than just the limited wording in WAC 173-201A-070. Anti-degradation is covered in more places including:

- The mixing zone provisions for lakes and reservoirs with mean detention time greater than fifteen days[1] carry additional anti-degradation provisions. Such mixing zones cannot be allowed unless it can be demonstrated to the satisfaction of the department that:

  (i) Other siting, technological, and managerial options that would avoid the need for a lake mixing zone are not reasonably achievable;

  (ii) Overriding considerations of the public interest will be served; and

  (iii) All technological and managerial methods available for pollution reduction and removal that are economically achievable would be implemented prior to

[1] See, WAC 173-201A-100(7)(d)

discharge. Such methods may include, but not be limited to, advanced waste treatment techniques.

- The mixing zone provisions allow for a party to request an alternate sized mixing zone.[2] The eligibility is subject to certain considerations and also carries with it many of the additional tests associated with anti-degradation.

  (a) AKART appropriate to the discharge is being fully applied;[3]

  (b) All siting, technological, and managerial options which would result in full or significantly closer compliance that are economically achievable are being utilized;[4] and

  (c) The proposed mixing zone complies with subsection (4) of this section.

- Any exemptions granted to the size criteria under subsection (12) of this section shall be reexamined during each permit renewal period for changes in compliance capability. Any significant increase in capability to comply shall be reflected in the renewed discharge permit. WAC 173-201A-100(14)

- Provisions for alternate size mixing zones are also discussed in the Permit Writer's Manual on pages VI-10 to 11, VI-37 to 38 and VI-40.

The reality is that the state hasn't allowed alternate sized mixing zones.[5] The fact sheet for an earlier permit for the City of Bremerton informed the City that they could request an alternate sized mixing zone (but they didn't). When the City of Vancouver requested one, the permit writer simply said it could not be allowed.

From the forgoing information it is evident that the implementation of anti-degradation in NPDES permitting in Washington currently uses the following approach:

- If a discharge has no reasonable potential to exceed[6] it does not need a limit; and this is effectively a de minimis example to kick out of further anti-degradation review. This consideration is made for each parameter of concern. The permit still is subject to public review and comment, which provides further read from the public and other agencies, which in turn can still support a different public interest decision.

- If the reasonable potential to exceed determination is positive, then a limit is imposed. Effectively, such a determination says that the discharger is expected to exceed the de minimis threshold and in practice, Ecology's policy is to simply not allow the discharger

[2] See, WAC 173-201A-100(12) and (13)
[3] This requirement is redundant, since eligibility for any mixing zone requires AKART (a technology based effluent standard) be applied.
[4] Note, this provision goes beyond AKART.
[5] Perhaps Ecology can identify some cases where alternate sized mixing zones have been authorized, but such cases will be rare at best.
[6] Reasonable potential to exceed determinations are made by Ecology permit writers following well developed EPA procedures from EPA's 1991 *Technical Support Document for Water Quality-based Toxics Control.* The procedures are described in detail in the *Permit Writer's Manual* and Ecology has developed technical spreadsheets that assist in these determinations. The same procedures are commonly employed by most other states with delegated NPDES programs, and by EPA when they prepare NPDES permits.

to cross that threshold. Consequently, a limit is imposed and additional treatment or other measures are required to comply with the limit. Granted there could be compliance schedules imposed to allow time to make the necessary changes.

- The option for an alternative sized mixing zone allows a discharger to cross the de minimis threshold. It requires much additional anti-degradation considerations. Examples of these have essentially been invisible because Ecology has simply not allowed any alternative sized mixing zones.

Protection for Outstanding Resource Waters

Protections equivalent to those required for outstanding resource waters (ORW) are already in place in the regulations for waters where there are valid needs for such protections.[7] These appear in WAC 173-201A-130 and are not very visible to those looking for examples of waters given ORW protections under WAC 173-201A-080. Nevertheless, WAC 173-201A-130 is the appropriate section where designations specific to a water body should appear. Examples include:

WAC 173-201A-130(46) – Green River and tributaries. Special Condition – no waste discharge will be permitted.

WAC 173-201A-130(65) – Mill Creek and tributaries from city of Walla Walla Waterworks Dam to headwaters. Special Condition – no waste discharge will be permitted.

WAC 173-201A-130(117) – Sultan River and tributaries from Chaplain Creek to headwaters. Special Condition – no waste discharge will be permitted above city of Everett Diversion Dam.

WAC 173-201A-130(121) – Tolt River, south fork from west boundary of Sec. 31-T26N-R9E to headwaters. Special Condition – no waste discharge will be permitted.

WAC 173-201A-130(127) – Union River and tributaries from Bremerton Waterworks Dam to headwaters. Special Condition – no waste discharge will be permitted

WAC 173-201A-130(138) – Wishkah River and tributaries from south boundary of Sec. 33-T21N-R8W to headwaters. Special Condition – no waste discharge will be permitted.

These protections were put in place because actual needs for such protections were identified. Granted, this is a little different than some of the considerations for ORW status that Ecology has been considering in the proposed rule language. A scoping question for the EIS would be; should we continue with the base line alternative of assigning special protections to waters based on need, or should we expand such protections to include other waters regardless of a demonstrated need. For the latter situation, where such protections are imposed regardless of need, the decision becomes a political one and not a scientific one. Political decisions belong with the legislature, not a state agency.

[7] Note, valid need for such protection is absent in the considerations for ORW, which may explain why states are reluctant to make ORW determinations. If need isn't considered, then the issue is political instead of scientific, and it belongs with the legislature.

Summary

The current Class B temperature and dissolved oxygen standards are fully protective of the characteristic uses of salmonids and other fish by definition. The switch to use based standards should not attempt to define three different sets of standards for salmonids and other fish. Salmonid spawning is not a characteristic use of marine waters.

Anti-degradation is already being implemented in Washington, at least with regards to point source discharge permitting and designation of waters requiring special protection. Permit writers make de minimis determinations (no reasonable potential to exceed a standard at the appropriate mixing zone boundary). Permit writers make determinations that discharges may exceed de minimis levels and then impose additional conditions to assure that de minimis levels will not be exceeded. Provisions exist in regulation and in guidance to allow greater than de minimis releases (larger mixing zones) provided additional anti-degradation considerations are met. However, Ecology's implementation history shows these provisions simply have never been allowed, which is a very stringent implementation of anti-degradation. Even the routine de minimis determinations by permit writers are still subject to a public review and various interested agencies also have opportunities to review. The effectiveness of that review process should not be downplayed. That process sometimes results in additional expressions of public and agency interest which may be weighed and considered by the permit writers and result in additional impositions on the dischargers.[8] Furthermore, the available public process also allows parties the opportunity to appeal permit conditions, and such appeals work both ways.[9]

Everett believes that the concept of Outstanding Resource Waters is flawed because it does not specifically ask the question of whether or not a waterbody considered for ORW status needs the non-degradation provisions that ORW status imposes. Consequently, unnecessary requirements could be imposed on areas where no need existed.[10] It is more sensible for the state to evaluate where waters exist that do need the extra protection that ORW status envisions, and then impose such protections into the site specific standards for the water bodies. The state already does this. The state has full capability to impose similar protections on other water bodies. No modifications to anti-degradation requirements pertaining to ORWs are necessary.

[8] Consider the recent NPDES stormwater permit for Cascade Pole in Taoma.
[9] For example, the appeal of the re-issuance of the general industrial and general construction stormwater NPDES permits.
[10] For example, if Ecology were to list the waters around the San Juan Islands as ORW waters, it would result in a no discharge requirement when in fact the waters may be very well suited to receiving some types of treated wastewaters.

HellerEhrman
ATTORNEYS

Memorandum

To: Melissa Gildersleeve, Department of Ecology

From: Lincoln C. Loehr

Date: July 29, 2002

Re: A discussion regarding changes to the ammonia standard should be included in the EIS and SBEIS.

99999-5101

Ecology should include a discussion in the EIS and the SBEIS of the alternative of adopting EPA's chronic ammonia criteria for all freshwaters, as opposed to only for waters without salmonids. The EIS should note that EPA has reviewed the basis behind Ecology's ammonia proposal (compared to EPA's new ammonia criteria) and found Ecology's use of Species Minimum Chronic Values (rather than Species Mean Chronic Values as used by EPA) to be

- vulnerable to experimental variability and error,
- not considered to be a sound procedure and
- counter to how EPA derives national criteria.

EPA also explained why certain study results identified by Ecology would not be used in developing EPA's national criteria.

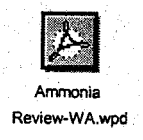
Clearly EPA believes that their own criteria are scientifically-based and appropriately protective and EPA clearly questions the analysis used by Washington to essentially deny use of EPA's chronic ammonia criteria for when salmonids are present. Of course EPA is willing to approve a state standard that is more stringent than EPA's criteria, but in this case they question the basis and the need for such an approach, and that is an important and reasonable consideration to identify and recognize in a discussion of alternatives for ammonia in the EIS.

It should also be noted in the SBEIS since a relaxed, yet protective standard based on EPA's latest criteria could result in changes to some 303(d) listed waters, fewer TMDLs, fewer permit issues before TMDLs can be completed, and less costs to try to achieve compliance which would be carried by small businesses as well as other entities. Perhaps this could be partially quantified by identifying those water bodies currently 303(d) listed for ammonia that would not be listed under EPA's new criteria.

Correspondence from EPA is attached.

Loehr, Lincoln C.

From: McKerney, Katy [Katy_McKerney@envircon.state.ak.us]
Sent: Monday, May 14, 2001 9:34 AM
To: Loehr, Lincoln
Subject: ammonia



fyi..Lincoln..

---Original Message -----

From: Brough.Sally@epamail.epa.gov<mailto: Brough.Sally@epamail.epa.gov> [mailto: Brough.Sally@epamail.epa.gov
<mailto: [mailto: Brough.Sally@epamail.epa.gov]>
Sent: Friday, May 11, 2001 4:26 PM
To: Katy_McKerney@envircon.state.ak.us
<mailto: Katy_McKerney@envircon.state.ak.us>
Subject: ammonia
<<Ammonia Review-WA.wpd>> <<NH3Answers1.wpd>> For you information and consideration.

Two documents are attached to this message. The first one is the State of Washington's analysis of EPA's new freshwater ammonia criteria. We have had trouble getting some of the pages to print in out computer system. If you have trouble let me know and I will see if we can get her document converted so that all of the pages can be printed. The second document is a memo from EPA HQ. Based on the Washington analysis we had some questions about the national ammonia criteria and the memo provides us with some answers/opinions.

We, Region 10, have been telling EPA HQ for quite some time that we did not think that we would be able to get the new national ammonia criteria past the Pacific Northwest Services during ESA consultation. HQ was not sympathetic to our concerns. EPA looks at the scientific data differently than the services sometimes. We tend to go with the "weight of evidence" approach and the services focus on the lowest concentration to cause an adverse effect. A little of this difference between our agencies popped up in this ammonia criteria development area.

Washington has done a thorough job of looking at all the data that EPA used to derive the criteria. They have come up with a "risk management" approach (see the EPA memo) for adopting ammonia criteria. We have not been able to engage the Services in a review of the new national criteria for ammonia. We tried to get ammonia on their radar screen but, the last I heard, ammonia was not a top priority for the Services.

I will keep you informed of any new developments in the ammonia arena. Let me know if you have trouble getting the Washington document to print. The person in Washington's Department of Ecology who prepared the attached report is Cheryl Niemi. She can be reached at (360) 407-6440 (I think this is her number, if it doesn't work send me an email message and I will track her number down).

--- Forwarded by Sally Brough/R10/USEPA/US on 05/11/2001 05:01 PM ----- Lisa Macchio
To: Sally Brough/R10/USEPA/US@EPA <mailto:Brough/R10/USEPA/US@EPA> 05/11/2001 cc:
12:17 PM Subject: ammonia
(See attached file: Ammonia Review-WA.wpd) (See attached file: NH3Answers1.wpd)

Note

To: Lisa Macchio

From: Brian Thompson

Subject: Response to your Questions on the 1999 Ammonia Update

Date: April 16, 2001

I am providing the following answers to your questions on whether the 1999 Ammonia Update adequately protects salmonids. Your questions, in part, were in response to an in-house document written by Cheryl Niemi of the Washington Department of Ecology (DOE). Where the questions address analysis of the salmonid data or the margin of safety approach, I referred to Charles Delos of our Health and Ecological Criteria Division.

1. Is Cheryl Niemi accurately portraying EPA's ammonia update methodology and analysis?

   Answer: We do not endorse or vouch for the accuracy of the State of Washington portrayal of the 1999 Update. Although we address below the specific questions posed to us, there was nothing in a general review of the document that led us to believe that there are any significant technical inaccuracies in the 1999 Ammonia Update.

2. How did EPA use the 5 studies which Cheryl refers to in her paper? Is there something EPA would say about these studies that Cheryl's paper might have missed?

3. How was the salmonid data used in the derivation of the ammonia criteria and why?

4. Has EPA reviewed the Arillo et al. 1981 study that is cited. If so, what was revealed about the study? What are EPA's concerns regarding the study? If we did not use it, why? What can we say about the study results and the 1999 criteria?

   Answer: The five studies referred to in Question 2 constitute part of the salmonid data referred to in Question 3. The Arillo study in Question 4 is one of the studies referred to in Questions 2 and 3. Consequently these three questions must be addressed together.

   The Arillo et al. (1981) study did not consider survival, growth, or reproduction, which are the effect endpoints; on which EPA bases all its chronic criteria. Therefore, EPA did not and would not use the Arillo results. And, as an aside, it appears to be speculation that Arillo's measured biochemical changes would cause effects on survival, growth, or reproduction. Indeed, most of the other available data seem to argue against such effects occurring at the concentrations at which Arillo found biochemical changes.

   Answer: Turning now to the salmonid studies in the 1999 Update, EPA did not average the results together to set an SMCV or GMCV, because of substantial disparities between the results. Nor did EPA count Oncorhynchus in setting N, the number of tested species. Nevertheless, EPA did compare the results against the criterion.

At 25_C EPA's criterion is below any salmonid EC20. But that has not been the issue. What is of concern is the criteria values at low temperature. Consequently, the criteria value at the test condition pH and temperature was calculated and compared with the EC20.

Of the salmonid studies tabulated in Table 5 of the 1999 document, we can dismiss the Oncorhynchus mykiss results of Burkhalter and Kaya (1977) as irrelevant. Likewise, we can dismiss the Oncorhynchus clarki results of Thurston et al. (1978) as irrelevant. Neither study tested at low enough concentrations to avoid lethality. Hence all that could be determined from this study was that the effect level was somewhere below the extremely high test concentrations.

That leaves the Oncorhynchus mykiss data of Thurston et al. (1984b), Solbe and Shurben (1989), and Calamari et al. (1977, 1981), and the Oncorhynchus nerki data of Rankin (1979). These studies are not exactly equivalent. The Thurston study was a five year full life cycle test. The others are 62-73 day ELS tests. The EC20s from Thurston and from Rankin are above the criterion. Those from Solbe and from Calamari are below the criterion. The geometric mean of the ratio EC20/Criterion from these four studies is above 1.0, as shown in the table below. This indicates that the EC20 can be expected to be above the criterion, and that the criterion is protective of the taxon.

Table 1. Comparison of salmonid chronic EC20s with the 1999 criterion applicable to the test conditions.

Study	Original EC20 (mg N/L)	1999 Criterion @ Test pH & Temp (mg N/L)	Ratio EC20/Criterion
Thurston	8	3.57	2.24
Solbe	2.55	4.18	0.61
Calamari	2.6	4.7	0.55
Rankin	2.13	1.25	1.74
Geometric mean			1.07

Of the other studies that yielded useful information, we may compare the criterion against the Rice and Bailey (1980) pink salmon effect concentration discussed on page 57 of the 1999 document. At the test pH and temperature, the chronic criterion is 6.74 mg N/L, well below the approximate EC20 of 11.2 mg N/L. However, for the reasons described in the 1999 Update, this study is not a true ELS chronic test, and therefore does not appear in Table 5.

We may also compare the criterion against the Hermanutz et al. (1987) results discussed on page 60 of the 1999 document. Hermanutz found some reductions in biomass at concentrations above 2.29 mg N/L under conditions where the criterion would be around 2.26 mg N/L. However, the Hermanutz et al. is a field study and therefore the results do not appear in Table 5.

In summary, there is great variability in the salmonid data. Considering the central tendency of the data and the protective aspects of the criteria derivation procedure, salmonids should be protected by the criterion. As with all science, there will always be some, although limited, uncertainty in EPA's criteria development. The variability in the salmonid data has not resulted in an unusual level of uncertainty in the ammonia criteria document.

5. What does EPA think about the margin of safety approach and/or the risk management approach taken by DOE in recommending their selected approach?

   Answer: The approach, described in the document differs from EPA's procedures for deriving criteria in at least one significant way, and would not be used for national criteria derivation. The approach places heavy emphasis on the Species ***Minimum*** Chronic Values, rather than Species ***Mean*** Chronic Values. When EPA lowers an acute or chronic criterion to protect a recreationally or commercially important species, it sets it at the mean value, not the minimum value for the species. When multiple studies contribute to the mean value, one-half of the individual study results can be expected to be below the criterion. EPA does not interpret this to signify that using the mean value to reset the criterion would fail to protect the species. Quite the opposite, since the mean is more likely to represent the true effect concentration, EPA considers that resetting the criterion by using the mean will protect the species, and is unlikely even to express uncertainty about the adequacy of such a criterion.

   The use of the minimum value among replicate tests will tend to maximize the vulnerability of the criterion to experimental variability and error, and is therefore not considered to be a sound procedure. The more data that are available, the more quirky and extreme the use of the minimum would become. For this reason, it seems unlikely that EPA would place great emphasis on the minimum value among replicates.

   Nevertheless, the margin of safety and risk management approaches appear to be reasonable approaches for states and tribes desiring an additional level of protection for aquatic life. As with other reasonable approaches used by states desiring additional protection, EPA would not disapprove of the resulting criteria. While EPA would support state retention of the1984 or 1992 criterion, EPA believes that its current criterion is scientifically-based and appropriately protective.

6. Are there weaknesses in the 1984/1992 criteria that should be considered if a state/tribe elects to retain these criteria?

   Answer: The 1984/1992 criteria were derived based on less data than was available for the 1999 Update. The additional data available for the 1999 Update allowed EPA to be more precise in determining the chronic criterion in the 1999 Ammonia Update. However, the science supporting the 1984/1992 criteria is still sound and, since in general they are more protective than the 1999 Update, the 1984/1992 criteria would also result in protection of aquatic life at various pH and temperature conditions. Hence, it is unlikely that EPA would disapprove a state or tribal ammonia criterion that is equivalent to the 1984/1992 criteria.

27589 Minkler Rd.
Sedro-Woolley, WA 98284
August 12, 2002

Melissa Gildersleeve
Section Manager
Department of Ecology Water Quality Program
P.O. Box 47600
Olympia, WA 98504-7600
SWQS@ecy.wa.gov

The Skagit County Cattlemen have reviewed the DETERMINATION OF SIGNIFICANCE AND REQUEST FOR COMMENTS ON SCOPE OF EIS. Below are our comments on alternatives, mitigation measures, and probable significant adverse impacts that the Department of Ecology should consider.

The EIS will identify the potential environmental impacts of the proposed Water Quality Standards changes and identify and analyze reasonable alternatives and mitigation measures. The water quality standard proposal lacked a good discussion about pollution problems that are due to natural conditions versus those that are human caused. Natural or background conditions and unusual events need to be discussed in more detail within the EIS as a probable significant adverse impact. Both items play a large role in the conditions of the water. DOE should add to the EIS Discussion list as **probable significant adverse impacts:**

- the identification of "natural and background" thermal conditions for streams,
- data assessments for streams in different geographic locations (Western Washington streams function under very different climatic events than those in Eastern Washington), and
- DOE should also add information that assesses the impacts of using a one-size-fits all water quality standard for fish use across the state versus setting standards appropriate to the geographic locations.
- Provide an assessment of the environmental impacts to the beneficial uses if the water quality standards are inappropriate for streams due to their location.

DOE referenced use of the Region 10 Temperature Guidance document. The document has not been finalized and the EPA Washington D.C. has not provided guidance for many of the DOE proposed standards. We would advise that the Region 10 document use be limited and that you take note of its "fish only" perspective. The EIS should consider environmental impacts under two separate topics: water science and fish physiology science. Reference material should be used to consider the science of the water; other reference material should be used to consider environmental impacts on fish under different numerical standards, and once the impact is considered within each topic ..... the impacts of the fish in a stream water habitat can be described.

DOE should examine this aspect of the environmental impacts in order to establish that all beneficial uses are examined fairly and adequately.

We also suggest adding to the environmental impact assessment "human" errors which are components of the standards due to unknowns and undeveloped science research. It is clear to us that Dissolved Oxygen is closely tied to stream temperatures and that it fluctuates throughout the seasons. The environmental impact of an inappropriate numerical standard needs to be addressed as well as one that DOE assumes to be adequate as a standard. Likewise, fecal coliform occurs in streams due to wildlife and water fowl and has variability within streams, between days, and between seasons. These variables should be included in order

to properly assess the environmental impact to human uses at different times and places. Identification methods for fecal coliform sources should receive a full discussion in order to accurately assess the probable adverse impact where contributions can be controlled and where they cannot.

The EIS should contain the following elements for their probable adverse impact to streams being scrutinized for standard compliance:

- Environmental impacts where "natural" conditions of Dissolved oxygen are unknown and corrective measures are prescribed which inadvertently change the "natural" DO levels.
- Environmental impacts where "natural" conditions of ammonia have not been identified and corrective measures are prescribed which inadvertently change the "natural" levels.
- Environmental impacts where "natural" conditions of fecal coliform are unknown and corrective measures are prescribed which inadvertently change the "natural" levels.
- Environmental impacts to streams where inappropriate temperature standards are applied based on a 7 day maximum average. Assess the "pay back" of overnight and early morning temperatures on streams that exceed the standard. What will the economic and environmental impacts be to streams where corrective measures are attempted to meet the temperature and DO standards, but physical factors limit success due to geographic location and other factors?
- There are probable adverse environmental impacts due to the limited sample size for 303d listings and this must be addressed. 5 samples for 303d listing under the fecal coliform standard would never meet sample adequacy to ensure that the results of 5 samples weren't due to chance. We suggest providing a section in the EIS that addresses the issue of data collections and the probable adverse impact on the water quality if inadequate sampling isn't a part of the process. What are the adverse impacts for streams that are listed through error and those that are not listed due to inadequate data?
- Sediment sampling should be addressed similar to the statement above for fecal coliform. Use of 3 stations creates a probable environmental impact if the 3 stations cannot produce adequate samples to ensure the data collection results aren't due to chance. Chemical tests conducted under lab protocols are usually good techniques. However, the field work requires a designed collection in order to provide the lab with quality material on which to conduct their work. Adverse environmental impacts will occur if lab results are relied on while the field collections were being made without a design to ensure that the random sites were sufficient to represent the population of sites available. DOE should address the very real environmental impacts that will occur if statistical tests are not performed on the data collections that are used to monitor water quality.
- DOE must include in the EIS the probable adverse environmental impacts due to a standards program that is data rich but design poor.

Mitigation measures:

Assess the environmental impacts of the time that will be required to implement corrective measures to meet the standards. Assess the environmental impact of the state wide temperature standard applied to east side streams where temperature decreases during July and August may not be possible due to climatic factors. Provide an assessment of the probable impact to beneficial uses if after specific time periods of 2, 4 and 6 years streams have not met the standard. Assess the number of miles of streams that might be in this category.

Other:

The EIS should address how "science" was selected (what was reliable, what wasn't reliable) by DOE as a foundation in setting the standards and in making assessments of the environmental impacts due to the water quality standards. Provide a definition of science and the criteria used to select reliable research results that DOE found appropriate to assess environmental impacts.

Include any DOE deviations from the GMA Best Available Science criteria (WAC 365-195-900 through 925). What environmental impacts will there be if DOE and the GMA "best available science" are not the same throughout the state? The probable adverse environmental impacts could cause the clean water program to be detrimental to streams if a solid foundation of water science theory are not established.

Adaptive Management impacts:

The probable environmental impacts of adaptive management techniques when applied across the board will be numerous if the consideration of geographic location is not a part of the EIS. The adaptive management techniques should not be examined only from the perspective the fisheries use, but should be assessed from a land management perspective. We suggest that the EIS address impacts using forest and agriculture management theories before addressing theories about fish responses. Environmental impacts due to forest and ag land management techniques should be considered relative to the geographic location in order to account for the land types where different practices are used.

Add to the discussion list "site potential" criteria that can be used to measure responses in streams if the standards are enforced. The standards perhaps should have tiers that allow different temperature and DO responses due to the physical characteristics of sites where stream segments are located. There are adverse environmental impacts that will occur on sites if inappropriate expectations for site restoration is attempted. These should be addressed using geographic location.

Antidegradation:

The probable adverse environmental impacts on streams designated in an antidegradation plan should be identified through both the natural factors due to location of the stream and what the natural limits are that help minimize the degradation. Without taking this approach DOE will not be able to distinguish between the functions of the stream that need protection and those that do not. Misidentification of streams that need protection would cause adverse impacts downstream with continued degradation and failure to meet the standards.

Sincerely,
Norm Mitchell
Norm Mitchell, President
Skagit County Cattlemen

COPY:
Jean Shea, Vice-President
Tip Hudson, Washington Cattlemen's Association
Skagit County Cattlemen Members
Pat Larson, Science Advisor

City of Seattle
Gregory J. Nickels, Mayor

Seattle Public Utilities
Chuck Clarke, Director

August 15, 2002

Melissa Gildersleeve, Section Manager
Water Quality Program
WA Department of Ecology
PO Box 47600
Olympia, WA 98504-7600

Dear Ms. Gildersleeve:

We would like to take this opportunity to comment on the scope of the Environmental Impact Statement (EIS) that will be prepared by Ecology for Modification of the State Surface Water Quality Standards.

One of the primary changes Ecology will include in the new standards is the transition to use-based standards. We believe that transferring existing classifications into a new "use-based" format would have significant impacts and therefore should be addressed in the EIS.

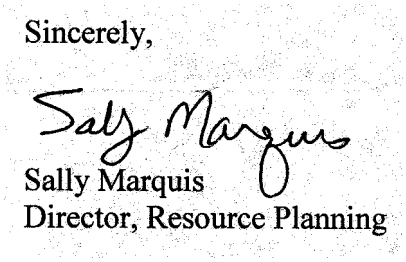
Our primary concern is that the transition will perpetuate misclassifications that are not valid. For example, Class AA and A currently include as characteristic uses, "salmonid migration, rearing, spawning, and harvesting" (WAC 173-201-045 (1) (b) (iii) and (2) (b) (iii)). It cannot be assumed that all waters that are currently classified as AA or A can support salmonid spawning. Marine waters are one obvious example, but there are many more in fresh waters.

We understand that EPA, as part of its revised regional water temperature guidance, will recommend that numeric temperature criteria for salmonid life stages be applied to areas based on where the use actually occurs, not on general classifications. If these criteria are applied by Ecology to all streams classified as AA or A, as we believe will be the case given Ecology's proposed use-based format, it could aggravate the disjunction between actual and designated uses.

This misclassification can have significant ramifications if it results in water bodies being inappropriately listed on the state's 303(d) list as not meeting water quality standards. This will affect the ability of point sources to obtain NPDES permits until a Total Maximum Daily Load, or a Use Attainability Analysis (UAA) is prepared. Since there is no precedent in Washington State for approval of a UAA, this situation could have significant delay and cost implications for permittees and others.

If you have questions regarding these comments, please contact Martha Burke (206-684-7686) of my staff.

Sincerely,



Sally Marquis
Director, Resource Planning

cc: Martha Burke

August 16, 2002

Melissa Gildersleeve
Section Manager
Water Quality Program
WA Department of Ecology
PO Box 47600
Olympia, WA 98504-7600

Re: Comments on Scope of EIS; Proposed Surface Water Quality Standards

Dear Ms. Gildersleeve,

We are writing on behalf of our organizations to provide scoping comments for the Department of Ecology's proposal to modify the existing surface water quality standards for Washington. We agree that it is high time to update Washington's water quality standards and that Ecology should conduct an environmental analysis of how its proposal will impact will our state's valuable waters and the species they support. We are concerned, however, that Ecology's current proposal is inadequate to protect Washington's water resources as mandated by the Clean Water and Endangered Species Acts. We therefore are submitting our alternative proposal for Ecology to include in its analysis. An analysis of this alternative is essential to meet SEPA's mandate that the EIS include feasible alternatives to the proposed action that will avoid or minimize adverse impacts or enhance environmental quality. We reserve the right to modify and revise these comments as Ecology prepares its environmental analyses for its proposed rule changes.

Purpose and Need

SEPA regulations require that the EIS include a statement of the proposal's objectives, specifying the purpose and need to which the proposal is responding, the major conclusions, and any significant areas of controversy and uncertainty. WAC 197-11-440 (4). Ecology should include a comprehensive Purpose and Need statement that fully discusses both the legal and environmental need for the rule changes, as well as an explanation of why many of the proposed standards have been weakened from those in the current rule and earlier drafts of the rule.

The Clean Water Act ("CWA") requires states to develop their own water quality standards and to review and update those standards every three years. This triennial review is an opportunity for states and the public to ensure that their water quality standards are strong enough to protect their waterways. Yet, despite the three-year review requirement, Ecology has failed to complete a comprehensive review of Washington's water quality standards in nearly 10 years. This decade of delay has forced Washington's water quality programs to operate based on outdated and inadequate standards that put the health of its waters at risk.

This year marks the 30th Anniversary of the Clean Water Act and while we have made significant improvements in protecting our water resources since the Act's passage, the state of Washington's waters demonstrates that we still face many challenges. Over 640 rivers, lakes, and streams fail to meet water quality standards. Polluters continue to dump such high amounts

of toxic chemicals into Washington waters that Washington now ranks 4th in the nation for the amount of carcinogens dumped into its waters and 5th for the amount of PBTs dumped into its waters. Fourteen different Washington salmon runs are currently listed as endangered or threatened.

It is critical that Ecology analyze the impacts of its proposed rule keeping in mind the objective and basis for these changes – its legal mandate to protect and preserve Washington's waters and the human and wildlife communities that depend on them. Therefore, the Purpose and Need section of the EIS should include the following:

- The legal requirements mandating the changes to the rules, including the Clean Water and Endangered Species Acts.
- The Clean Water Act requirements that states update their water quality standards every three years and adopt antidegradation policies in order to protect designated uses.
- The status of salmon and steelhead and other aquatic species in Washington waters listed under the Endangered Species Act, and the need to protect and restore these species.
- The status of Washington's waters, including the number of lakes, rivers, and other water bodies in Washington that fail to meet current water quality standards.
- The need to protect public health and recreation.
- The need to protect the state's highest quality waters from all future degradation, as mandated by the Clean Water Act.

Alternatives Analysis

The EIS must include reasonable alternatives to the proposed action that would avoid or minimize adverse impacts or enhance environmental quality. RCW 43.21C.030(c), WAC 197-11-400(2). "Reasonable alternative" means an action that could feasibly attain or approximate a proposal's objectives, but at a lower environmental cost or decreased level of environmental degradation. WAC 197-11-786, 197-11-440(5). The environmental community's proposed alternative meets this definition. More stringent standards for temperature, dissolved oxygen, antidegradation implementation, etc. are feasible and would significantly enhance environmental quality. Therefore, in order to conduct an adequate analysis under SEPA, the EIS should include the environmental community's proposal as a reasonable alternative.

A summary of the major changes from Ecology's proposal contained in the environmental community's proposed alternative is as follows (see attached proposal for specific language):

- **Temperature Criteria:**

  For all salmonids, including migratory char, use the October 2001 Regional EPA Temperature Water Quality Standards.

- **Dissolved Oxygen Criteria:**

  Impose dissolved oxygen standards that use a 7-DADM.

- **Mixing zones:**

  Prohibit mixing zones for PBTs.

- **Antidegradation Implementation Plan:**
  - Significantly strengthen anti-degradation implementation by removing proposed exemptions. All actions will be reviewed.
  - Add existing uses to designated uses to be fully protected.
  - Protection of high quality waters includes current as well as new and expanded actions for anti-deg review.
  - The primary purpose of the alternative evaluation is to determine if there is an overriding public interest in degradation, and a secondary purpose is to identify and mandate the least polluting alternative, if degradation is found to be in the overriding public interest. This analysis must use the Best Available Science. The alternatives must include a no action alternative and reduction in scale and intensity of project. Current alternatives only address technical alternatives and are not linked directly to the decision on overriding public interest.
  - Outstanding National Resource Waters identification and designation is made easier and clearer process is defined. A timeline for action is imposed. Designation decisions are made by DOE, not the legislature or the Governor. Some State and Federal waters with special protections must be reviewed for designation. Full protection is imposed on all ONRW waters. No offsets are allowed.

- **Miscellaneous:**
  - Review Standards every three years, not periodically.
  - Strengthen or add several definitions: Background Conditions; Best Available Science, BMPs; Chronic Conditions; Created Wetlands, Designated Uses; Drainage Ditch; Existing Instream Uses; Full Support; Lowering Water Quality; Nonpoint Source; PBTs; Treatment wetlands; Water Quality Offsets; Wildlife Habitat.
  - Add deleterious dissolved gases, fungi tastes or odors, sludge or scum or floating solids to list of pollution types for all designated uses.
  - Marine Waters provided with full support for beneficial uses, not the various classes of degradation currently allowed and proposed.
  - Remove Ecology's exemption for lakes 5 acres and less.
  - Biological Samples continue to be averaged over 30 days, not 12 months as proposed.
  - Eliminate the exemption for unusually warm weather.
  - NPDES permits must contain specific language that they will not violate standards.
  - Add language that will protect wetlands.

Thank you for considering these comments during scoping. We look forward to working with Ecology throughout the rulemaking process to ensure that the new rules are strong enough to protect and restore our state's vast water resources.

Sincerely,

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Citizens for a Healthy Bay

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